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The GEOGRAPHICAL MAGAZINE

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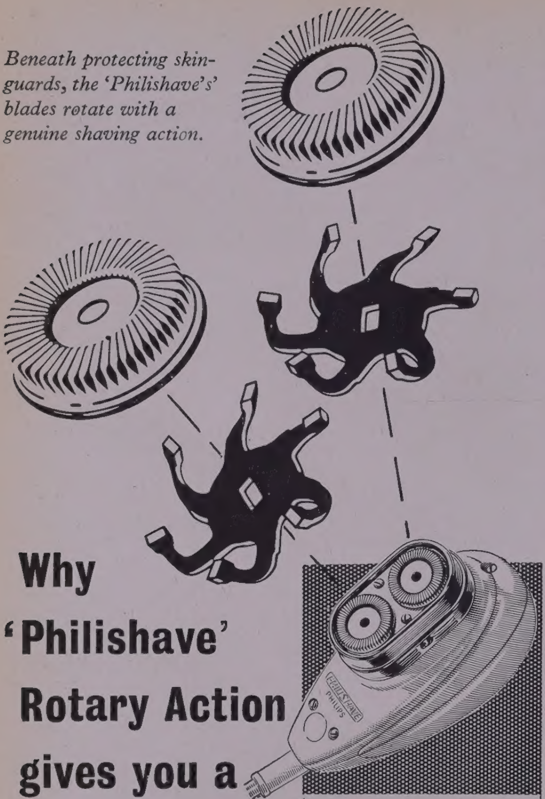

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GD28

The Hebrides Today

by SETON GORDON, C.B.E.

This month a Royal cruise through the Hebrides is to take place and Her Majesty the Queen is to visit most of the islands. The following article describes how the islesfolk live and the present prospects for their various occupations. Its author, who lives in Skye, has written many books on the Hebrides, including Hebridean Memories, The Charm of Skye *and* Islands of the West

West of the Scottish mainland two island groups lie in the Atlantic, the Inner Hebrides and the Outer Hebrides. Here the old Gaelic language continues to be spoken, but even here the old way of life is fast changing. As recently as twenty-five years ago the people of the Outer Hebrides spun and wove their own clothes; wireless was a thing unknown; the telephone is also an innovation.

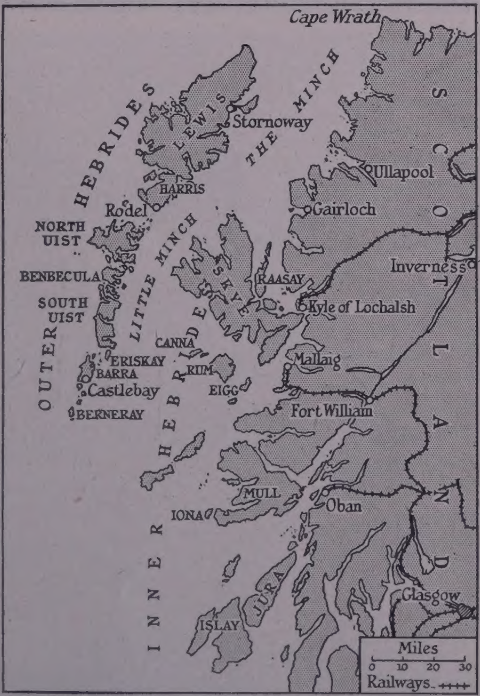
Of the Inner Hebrides the best known are Islay, Jura or Deer Island (named long ago by the Norsemen), Iona (where the Queen is to attend service in the abbey church), Mull, Canna and Rum, Eigg with its shapely hill named the Scuir, Raasay and Skye. Among these Skye attracts the greatest number of visitors, partly because of the beauty of its scenery and the celebrated Cuillin range of hills, partly because of its associations with Prince Charlie and Flora MacDonald, partly because of its nearness to the mainland, from which it is less than ten minutes' sail at the Kyle of Lochalsh.

The Outer Hebrides are smaller, and lie farther out in the ocean. Most southerly is Berneray or Barra Head, with a lighthouse 600 feet above the sea and often hidden in the clouds of ocean. Sailing northward, the traveller passes in turn Barra, where is the ancestral castle of MacNeil of Barra and where nineteen out of twenty inhabitants at the present day bear the name MacNeil, and Eriskay, where Prince Charlie first set foot on Scottish soil and where a small convolvulus, known as the Prince's Flower, is still to be found. North of Eriskay is South Uist, birthplace of Flora MacDonald, on whose grave in Skye is a noble epitaph by Samuel Johnson; north of South Uist, and now connected with it by a bridge, is Benbecula. Both South Uist and Benbecula are to be closely affected by the proposed guided-missile range—of this more anon.

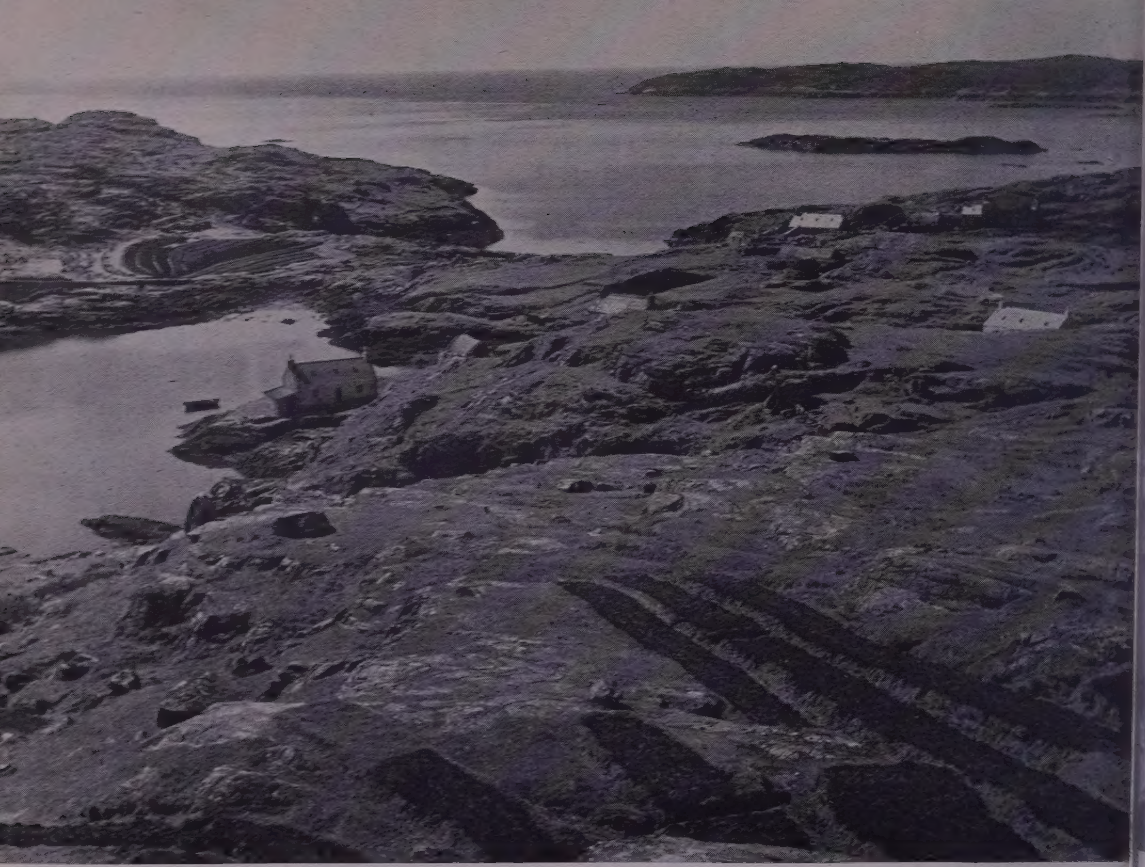
North of Benbecula, across the North Ford, which also is soon to be spanned by a bridge, is the island of North Uist; northward again, across an island-studded sound, is Harris with its old abbey church of Rodel. North of Harris is Lewis (actually Harris and Lewis together form one large island) and on Lewis is Stornoway, the only town in the Outer Hebrides and a centre of the herring fishing.

The chief industry of the Hebrides is crofting although on some of the Inner Hebrides, notably on Islay, are large farms, for this is a fertile isle. The island crofter has been helped by government subsidies, which began during the war years. Even with these subsidies the smaller crofter is finding life difficult and a number of crofts have recently become vacant.

"Harris" tweed, made exclusively in the Outer Hebrides, is the only really important fabric that continues to be woven by hand. Last year 6,000,000 yards were produced, of which 70 per cent were exported—50 per cent



A. J. Thornton



J. Allan Ca

(Above) *Crofts at Tarbet on the Islan*
of Harris. In the Outer Hebrides t
inhabitants have to be as nearly sel
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cost and difficulties of transpo
Crofting only survives with the aid
government subsidies; other measure
such as the improvement of hill-grazi
and the enlargement of holdings, a
needed if it is to support competiti
producers employing modern equipme
(Left) *A crofter mowing with a scyt*
(Opposite, top) *The inner harbour*
Stornoway on the island of Lew
Stornoway, the largest town in
Hebrides, is the centre of the herr
fisheries and the Harris tweed indust
(Opposite, bottom) *Gathering s*
weed on the western shore of South U
Seaweed has long been used for manu
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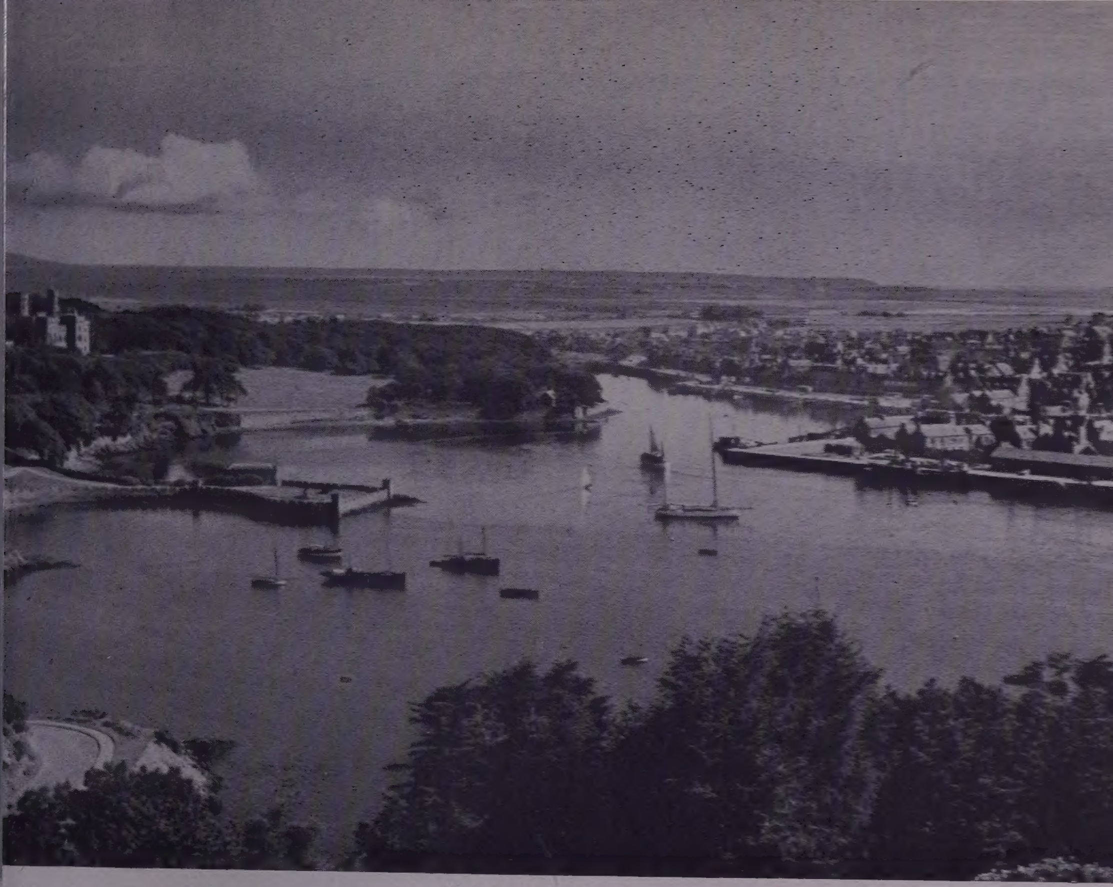
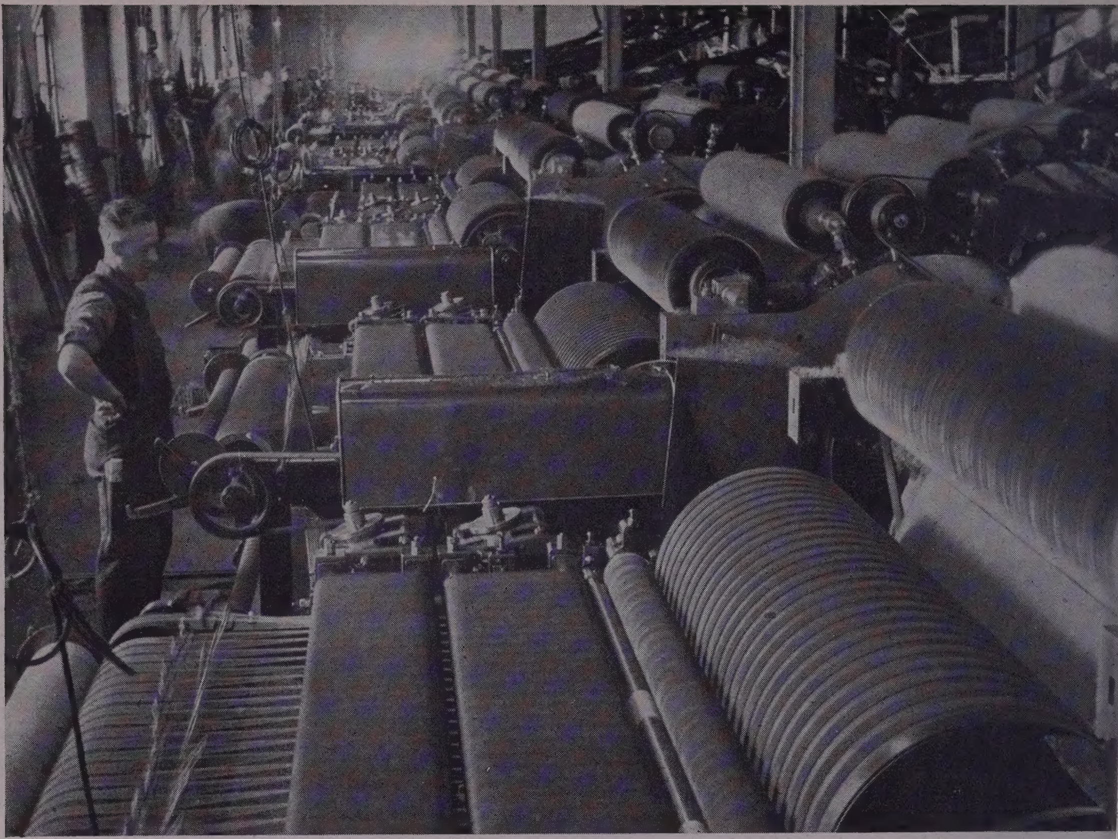




J. Allan Cash

The making of Harris tweed is one of the chief industries of the Outer Hebrides. Some processes are now largely mechanical: the machines shown here card and clean the raw wool and then spin it

to dollar markets in Canada and the U.S.A. All the weaving is done at home, most of it on modern looms which are largely owned by the weavers. The old-fashioned, completely hand-worked loom is still used in some crofters' homes in North and South Uist, and in Skye at the Portnalong settlement of Harris and Scalpay crofters. Formerly all the wool for Harris tweed was washed in the burns, whose water is stained by peat, and spread on the heather and dry-stone dykes to dry. Now, though a little is still cleaned in this way, it is mostly done in one or other of the five plants in Stornoway. Much of the spinning and carding is carried out in these plants, too, but a fair proportion is still spun at home by hand, by independent crofter-weavers. The island women are proud of their skill and reluctant to give up their traditional handicraft. Another process that has almost entirely been taken over by the mills is finishing the cloth, which used to be performed at social gatherings to the accompaniment of ancient Gaelic "waulking" songs. I should like to see the old hand-spinning, vegetable dyeing and other processes encouraged, since the tweed resulting from them is a very different product from that now so largely made in the mills.

A considerable number of the men of the Hebrides are seamen. Some of them serve in coasting steamers, others are deep-sea men and sail to distant lands. The islands are served by MacBrayne's fleet of steamers, some of them based in Glasgow, others on the mainland ports of Oban, Mallaig and Kyle of Lochalsh; the old coal-burning ships have been almost entirely replaced by oil-fuelled vessels. Although distances, as the seabird flies, are comparatively small between the Inner and Outer Hebrides and the islands of each group, communications are slow and of necessity devious. Over all the life of the Hebrides hangs the incubus of enormously increased freight charges; unless these can in some way be reduced the outlook for any real prosperity will remain doubtful.

The herring industry is engaged in by a number of islesmen, the two chief ports being

Castlebay in Barra and Stornoway in Lewis. Herring drifters and ring-net boats from the mainland also operate here during the season. Stornoway during the last two seasons has been working under increased competition from mainland ports and some anxiety is felt about its future. Since road transport is becoming increasingly available for carrying fish, the ports of Ullapool and Gairloch on the north-west mainland, though not accessible by railway, are now used by many vessels of the fleet which formerly landed their catches at Stornoway.

Lobster fishing forms a subsidiary occupation but on some of the islands, notably on Skye, it has declined since the war. Decked lobster-boats operating from mainland ports are blamed for this, for they fish over a much wider area on the coast than the island boats, and carry a far greater number of lobster-creels.

Brown seaweed was used in the Outer Hebrides for nearly 200 years, until the end of the 19th century, both as a fertilizer (being an excellent manure for potatoes) and as a raw material for the chemical industry. It was burnt to provide this; but the soda, potash and iodine produced from it up to the turn of the century failed to compete with similar products obtained more cheaply from mineral deposits discovered elsewhere. As described by Dr F. Neville Woodward in *The Geographical Magazine* for April 1951, the British wartime use of alginic acid, a colloid chemical found in the brown seaweeds, has stimulated the development of an extensive new industry employing alginates, its derivatives, as their basic chemical. Two of the most valuable seaweeds for this purpose are *Ascophyllum nodosum*, found between high and low water marks, and various kinds of *Laminaria*, found below low water mark.

In South Uist seaweed-collecting, which was formerly important in the island's economy, has been successfully revived by Alginate Industries Ltd. This company plans to open a new factory in the autumn on the neighbouring island of North Uist, making use of *Ascophyllum*, which grows plentifully on the east coast of that island. The dried seaweed is ground and processed for manufacture into numerous products, such as the thin skins which encase sausages, soluble surgical ligatures, dental moulds, textiles, toilet preparations, cosmetics and ice-cream 'stabilizers'. In South Uist alone 150 families find employment in collecting, during the winter months, stems of *Laminaria* thrown up after storms.

The Hebrides have of late been in the public eye because of the proposal to establish a guided-missile range on the island of South Uist. There has been much outcry against this scheme, which it is felt will perhaps destroy the ancient Gaelic culture and way of life on the isle, and destroy also the charm

A crofter of Lewis at work on his loom. The actual weaving is still done by hand in the islanders' homes. The looms now mainly used are by no means primitive and cost about £70

Picture Post *Library*

an Cash

The proposed guided-missile range on South Uist will affect an island which is far from barren and in the "machair" or salt meadows of the coastal plain affords excellent summer grazing for cattle

of one of the few unspoilt places in Britain, where unemployment is almost unknown and the people are happy and contented with their lot. Although some of those most bitter in their opposition to the scheme are not islesmen, there is strong opposition among many of the older island generation, and among the more thoughtful elements. But many of the younger men look forward to the materialization of this revolutionary project, for they see in it an era of prosperity and high wages. While the building of the range is in progress it will certainly bring prosperity to South Uist, but it is feared that this prosperity will be transient, and that afterwards those who have benefited by it will be dissatisfied with their former way of life. There is thus great divergence of views among the islesfolk themselves; but even if the whole island were unanimous in condemning the scheme it would probably go on.

It seems to me that a most important consideration in the planning of the large operations necessary if the South Uist guided-missile range is to be constructed, is the choosing of the right type of workmen. Irreparable harm to island life could be caused by the employment of an unsatisfactory type, such as was seen in many parts of the Highlands and Islands during the war years. Surely it should be possible to give most of the work to the islesmen themselves? Could not the men of South Uist, and of Barra, North Uist, Harris and Lewis, have priority when applying for employment here?

But government work is transitory, and without the croft, life in the Hebrides would gradually die. Were government subsidies withdrawn tomorrow, a mass emigration of crofters would follow. What can be done to keep the crofter on the land? The size of a croft might be increased to 20-30 acres of arable; and hill-grazing might be improved by liming and draining, at government expense. It is also thought that the government should do more to improve livestock marketing facilities in remote island districts. I am told that in May of the present year, in the Isle of Harris, at one cattle sale only one beast was sold, and at another only two. The district was too remote, and transport too costly, for dealers to attend. Island Members of Parliament have for some time been pressing the government to reduce the prohibitive cost of transport in the Hebrides, but without success. Crofting life produces a virile race of independent people; Britain would be the loser if that race disappeared.

Scotland's North-East Corner

by W. B. FISHER

The Professor of Geography in the Durham Colleges, University of Durham, who has had much contact with Scotland and was for a number of years on the staff of Aberdeen University, demonstrates herein the physical variety and human diversity of one of the less-visited parts of Great Britain

When undertaken for the first time, the train journey from Aberdeen northwards to Elgin can be more than a little disturbing. Plainly labelled on departure from end to end as bound for the one destination, the train may divide during the last hour of its run into as many as three portions, all of which ultimately reach Elgin, but at different times and by varied routes. For the geographically minded traveller however, inner alarm at the sound of the rear of the train parting company with the rest will rapidly be quelled by the topographical interest of the succeeding journey. A situation near the front of the train will carry one through a broad and increasingly open, fertile plain, diversified only by low morainic ridges; a seat near the centre involves a roundabout journey over fantastic loops and heavy gradients, threading a tortuous way among the narrow forested ravines of the whisky country—Glen Livet and Speyside; whilst the last few coaches of all drop down to a stark coastline of jagged granite headlands and sandy bays.

This was my own first introduction to Elgin and the lowland fringe bordering the Moray Firth. On subsequent occasions, now master of my fate and thus able to choose any desired part of the train without a qualm, I was able to appreciate the full variety of conditions that, surprisingly, lie side by side in the ninety-odd miles of coastline between Peterhead on the extreme east and Inverness on the west.

If this coastal area had formed a part of France, a magisterial exposition of its essential geographical unity would by now have been written by the hand of an acknowledged authority, and a group of doctoral theses would underline the individuality of the many *pays* composing it. In Germany, profound disquisitions would have been devoted to the patterns of human settlement and to the survivals, racial and cultural, of Nordic and Teutonic origin. Being however Scotland, where geographical studies are not held to demand the same kind of seriousness, much is as yet left for the visitor himself to discover—maybe perhaps a principal attraction of the region.

West of the Findhorn river, as far as Inverness, high ground approaches closely to the sea, and there is no more than an increasingly narrow tongue of lowland giving access to the town. Approaching Inverness, the geomorphologically minded can notice how road and railway follow well-marked glacial terraces and raised beaches; but attention will first be taken by the superb view across the Moray Firth to Cromarty and the Black Isle—the latter not an island at all, but an isolated promontory. This vista of sparkling water and majestic heights beyond is probably at its best in spring, when skies are clear and the mountain peaks still carry a snow-cap; and a sight of the northern coasts of the Firth, almost as straight as a ruled line, brings vividly to life the school-book diagrams of faulting and rift-valleys.

My contacts with Inverness may have been unfortunate, or perhaps it is merely a case of personal bias, but a visit to the town usually leaves me somewhat melancholy. We may conveniently exclude it from the area under consideration, to which it does not properly belong. East of Nairn the hills recede, and in the plain traversed by the lower courses of the Findhorn, Lossie, and Spey rivers is to be found the most delightful part of the whole coastal area. The barren moorlands—such as those of Culloden or the "blasted heath" of Cawdor—give place to richly cultivated farmlands interspersed with groves of well-grown, relatively luxuriant trees. Flowers of many kinds appear in profusion in the cottage gardens; but the most surprising sight of all can be the expanse of begonias growing out-of-doors in Elgin city. On my visits to this district it has been a recurring source of surprise that one could often leave behind at the mountain-rim the cold, boisterous weather so characteristic of North-East Scotland and drop down into a district of distinctly softer air, brighter conditions, and open horizons with striking sunsets. This is hardly to say that Moray and Nairn are likely seriously to rival the Côte d'Azur as regards weather conditions—they *can* have cold and rainy spells

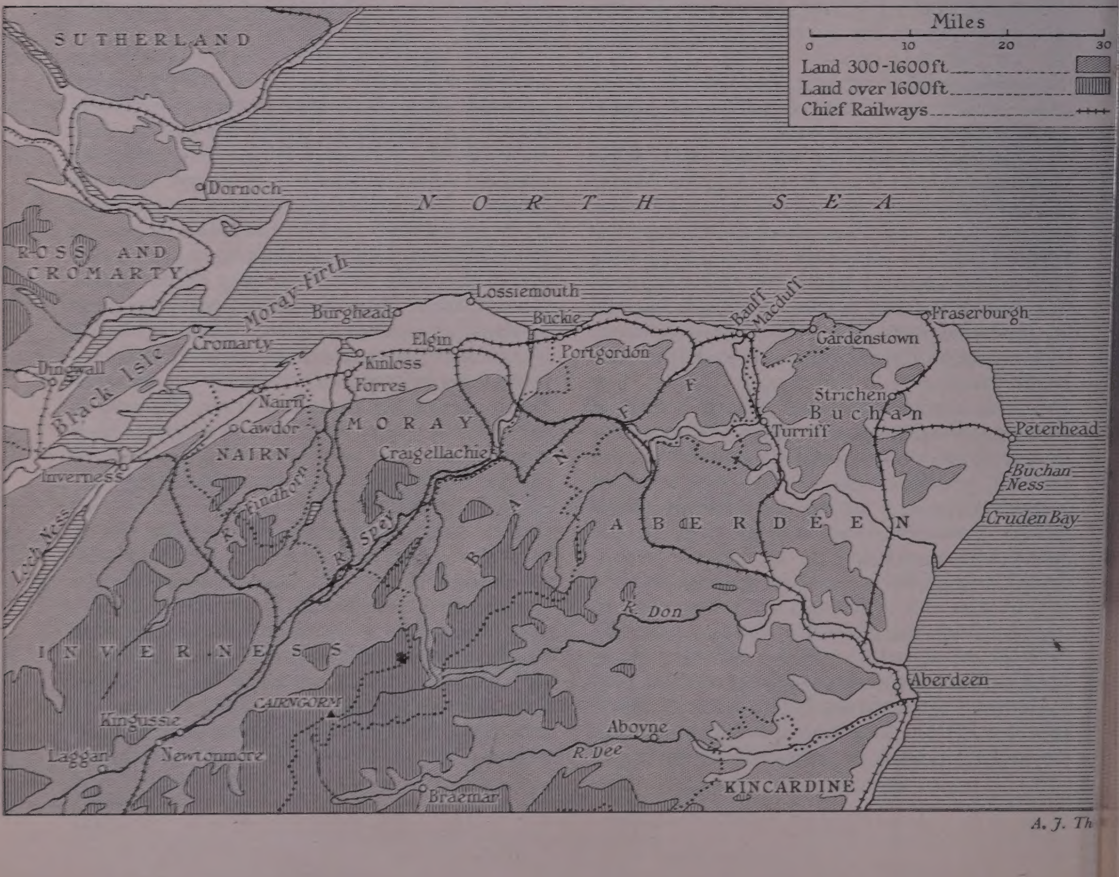
—but on repeated occasions I have left Elgin merely carrying a coat, which I have been forced to wear on arrival at Aberdeen.

Statistical evidence of the distinctive nature of the climate round Elgin can be found from official sources. Air Ministry figures of "aerodrome fitness" show that Kinloss and Lossiemouth airfields have consistently the best flying weather in Britain—for this, clear skies and absence of fog are the chief criteria (nothing being said about temperature!); and during World War II it was a common experience that when early morning fog made a return to English Midland aerodromes hazardous, the Elgin area could often be relied on to receive returning night-bombers.

One curiosity of Moray is (or perhaps was) the Culbin Sands, which are located just west of the mouth of the Findhorn river. Until very recently these were a large expanse of light-coloured and very fine sand, covering many acres and constantly changing their outline, with quite imposing dunes and hollows. The visitor could easily imagine himself in a real Sahara and, on occasion, a hot summer sun lent extra vigour to this illusion. A story is told that sixteen farms and a "big hoose" lie buried under the Culbin Sands, which suddenly spread during one day in the 17th century, as a judgment on the wickedness of the inhabitants. Most probably, the sandy wastes originated more gradually, following over-cutting for cottage thatch of a natural growth of marram grass that once held down the dunes. Now, a major scheme of afforestation is proceeding at Culbin, with the ingenious device of 'thatching' the sand-surface by conifer branches, which rot and provide the young saplings with just sufficient stability and humus. In a short time, most of the Culbin Sands will have disappeared.

Loose sand is by no means restricted to the Culbin area. Where fine glacial deposits have been broken into by incautious farmers or road-makers, a high wind can produce minor sandstorms. From the cursory mention usually accorded in the local Elgin newspaper, it would seem that this phenomenon is by no means uncommon in the district—another indication of the dryness of the climate!

East of the Spey river, the genial lowlands of Moray soon pass into the distinctly poorer and more rugged countryside of Banff. Here



A. J. Th

Robert M

The many different types of countryside that compose Scotland's north-east corner can be enjoyed by travellers on the three railway routes from Aberdeen to Elgin. One of these, after following the winding valleys of Speyside, among forested ravines and heather-covered mountainsides, emerges at Craigellachie (seen in the middle distance) where it crosses the Spey before continuing through Morayshire to its destination

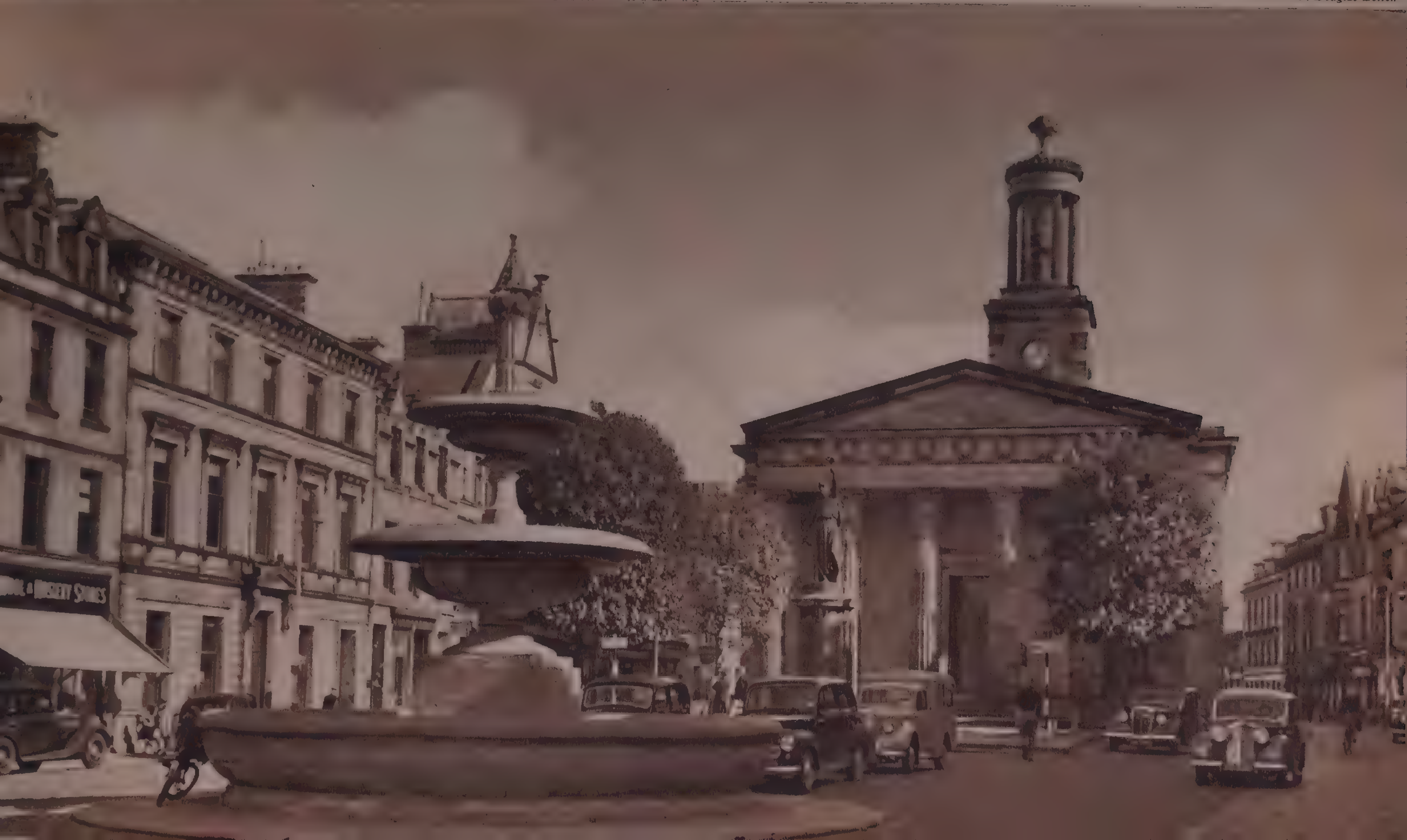
Robert M. Adam

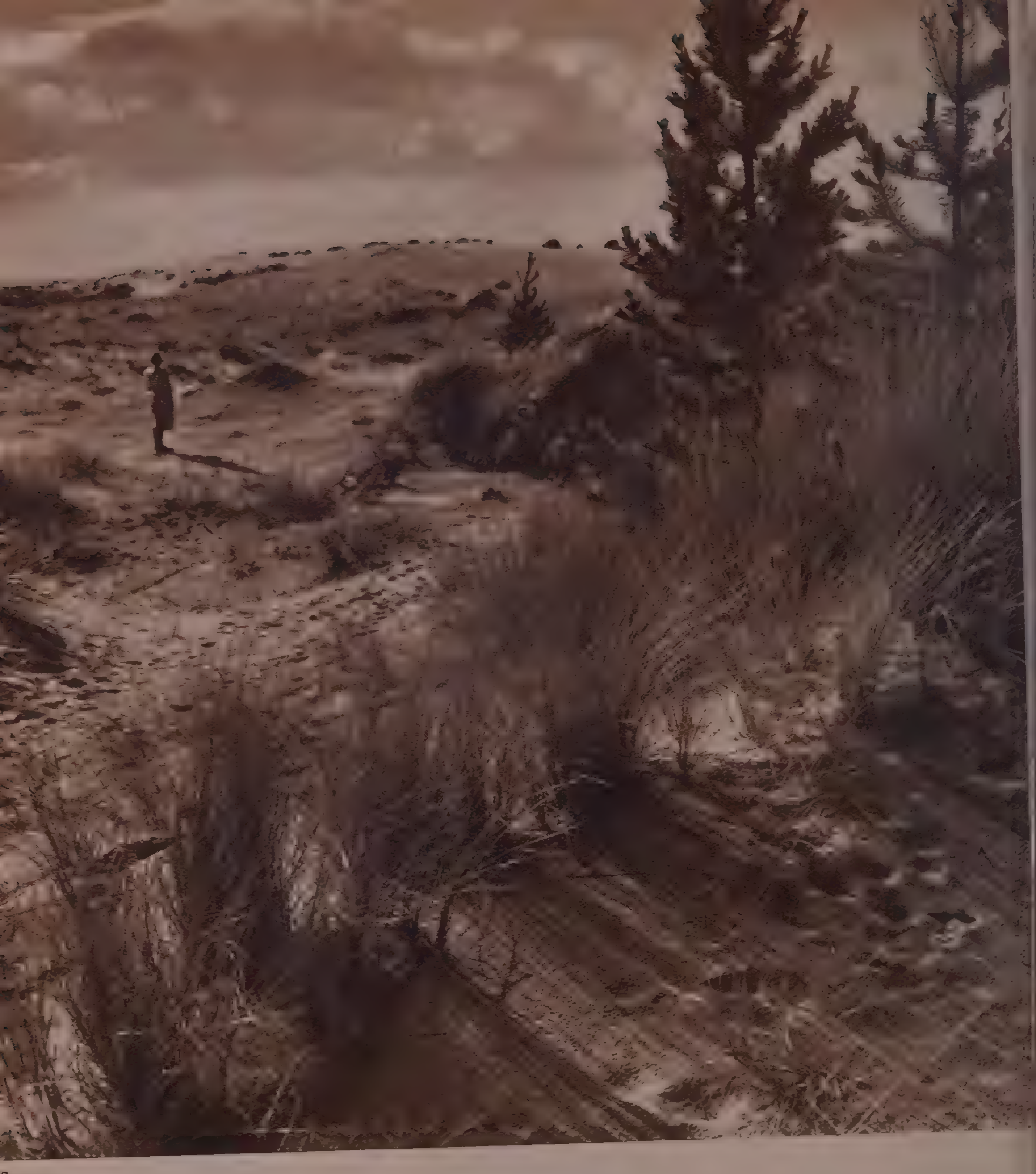
Beyond Elgin the landscape flattens out, "the barren moorlands give place to richly cultivated farmlands interspersed with groves of well-grown, relatively luxuriant trees." The Laich o' Moray, a rich agricultural plain between Elgin and Nairn, owes its fertility in part to a distinctively good local climate. It is bounded by the Moray Firth, whose northern coasts appear in the distance "almost as straight as a ruled line"

relatively luxuriant trees." "The Laich o' Moray, a rich agricultural plain between Elgin and Nairn, owes its fertility in part to a distinct
ively good local climate. It is bounded by the Moray Firth, whose northern coasts appear in the distance "almost as straight as a ruled line

The dignified calm of Elgin is far removed in feeling if not in space from the rugged vigour of the fishing towns on the neighbouring coast. With its cobbled, tree-lined streets and cosmopolitan elegance it brings to mind the 18th-century watering-places of a more southern tradition

G. Douglas Bolton



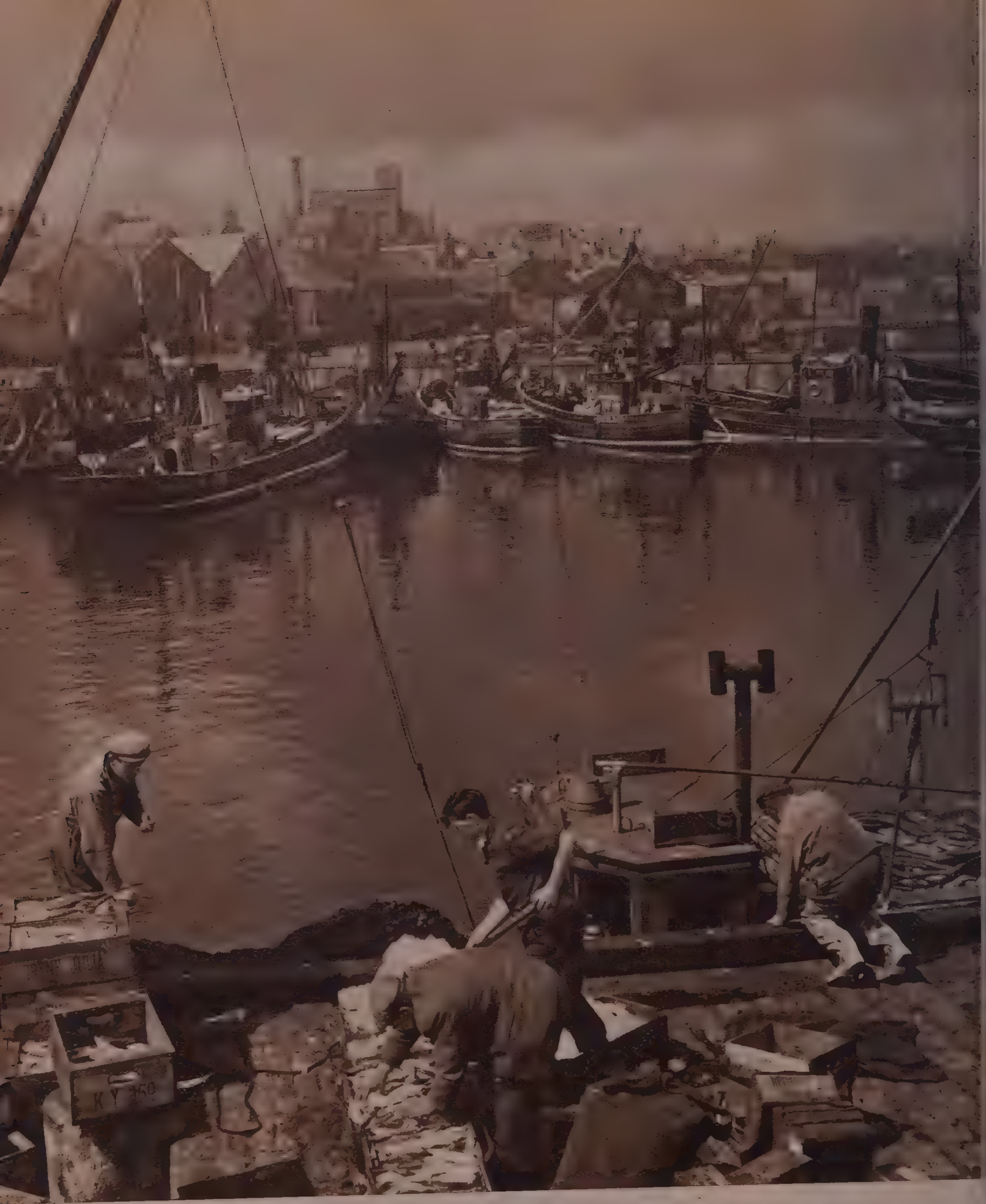


Scotsman

West of the mouth of the Findhorn River in Moray, the Culbin Sands were until recently a large expanse of desert, with constantly shifting dunes where "the visitor could easily imagine himself in a real Sahara". According to local legend, the sands spread suddenly in 1694 as a judgement on the wickedness of the inhabitants. Now the 'desert' is being reclaimed. Re-afforestation was begun on a large scale in 1922 and by planting suitable grasses or 'thatching' the sand with branches, the shifting dunes have gradually been brought under control

The Sco

Gardenstown exemplifies the "almost grimly utilitarian aspect of the Banff coastal towns, huddling tightly against the northern winds in the shelter of their rocky bays". A place of severe granite walls and slate roofs, it squats under a forbidding promontory. Behind the coast the hills of Banffshire reach back to a barren plateau, a poor, infertile county by comparison with Morayshire; though it stretches fifty miles into the Highlands its principal towns are seaports, relying as here upon the uncertainties of fishing for a livelihood



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Landing a catch of fish at Port Royal, Peterhead, in Buchan, the north-east part of Aberdeenshire. Though now chiefly a herring-fishing port, Peterhead had a reputation as a spa in the 18th century, when the then Major Wolfe came there for a cure. The fishing population is in part migratory, living seasonally between the rival towns of Fraserburgh and Peterhead on the one hand and Yarmouth and Lowestoft on the other

Herrings caught off the east coast of Scotland, on their migration southward, are at their best and the right size for canning. Crosse and Blackwell's factory at Peterhead takes advantage of this fact, but since the herring-catch is seasonal the canning of other food is also undertaken, the firm finding it economic to bring peas from England, beans from Chile and tomatoes from Italy to Aberdeenshire in order to make the best use of the ample labour force available there

Courier and Advertiser

M. Tyrell Studio, Elgin

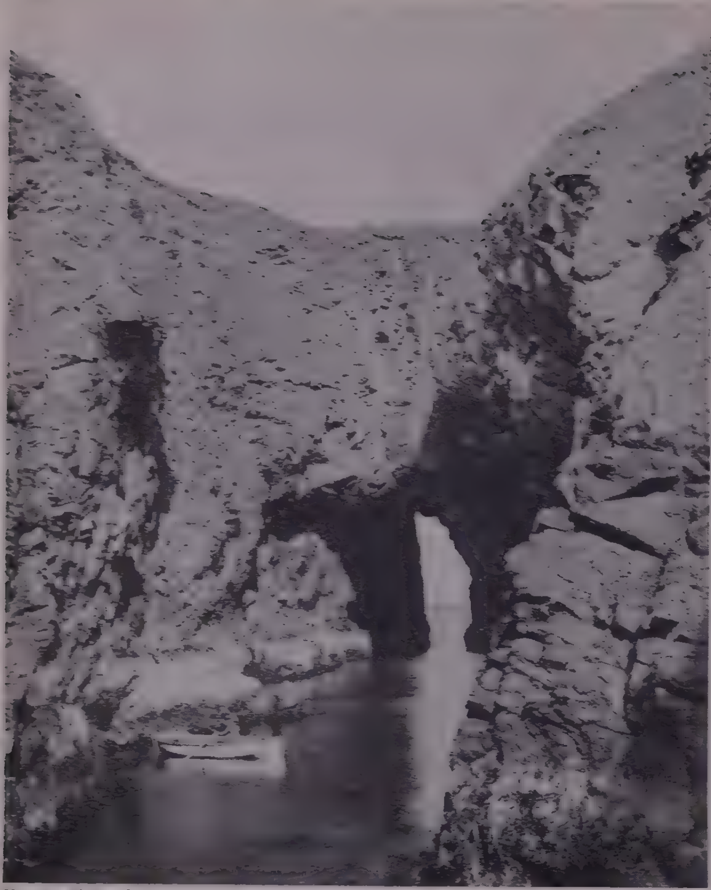
Burning the Clavie, a ceremony from pre-Christian days, takes place every January at Burghead. The clavie, a rough cask, is filled with inflammable matter and attached to a pole with a huge nail. It is then set alight and carried up through the village to a stone 'altar' on the hilltop. Thereafter as it rolls downhill the blazing pieces are eagerly collected to bring good and ward off evil fortune during the coming year the hills reach the sea, producing a high and bold coastline, succeeded inland by a rather bleak plateau that rises to an occasional summit of over 1500 feet. Rock character changes too: the distinctive dull red of the Old Red Sandstone (Devonian) is replaced by the neutral or varied colours of the primitive Archean granites. Inland, farming is often unrewarding, even precarious—as indicated by the expanses of unimproved peat-bog; and, repulsed from the soil, the inhabitants turn to gaining a living from the sea. Elgin and Forres are well away from the coast; but despite its long territorial extension inland, the principal towns of Banffshire—Banff itself, Buckie, Macduff and Portgordon—are seaports. The contrast between Elgin, with its long tradition of dignified elegance (mediaeval, 18th-century and modern) and the plain, almost grimly utilitarian aspect of the Banff coastal towns, huddling tightly against the northern winds in the shelter of their rocky bays, is something which never fails to impress me. Here are no Italianate arcades with red-tiled houses, or cathedral ruins set among lawns and flower-beds; only strong granite walls and sheet-iron or slate roofs, with a rectangular pattern of streets that can never attain the charm of a curved vista. Construction in granite, unless undertaken by persons of great wealth and ingenuity—a King of Spain or an Aberdeen University—closely restricts the builder to a plain, rugged style, which is weatherproof and solid, but hardly elegant. It is significant that the monkish builders of King's College in the Granite City itself chose for their finest work a softer sandstone, not native granite.

Clearly the abrupt changes in conditions as between Nairn and Moray on the one hand, and Banff on the other, derive from two factors—climate and rock type; and the more I visit the region, the more tempted I am to believe that climate plays the greater role in producing these differences. My explanation of the warmer and drier conditions found in Morayshire would be that this latter area lies immediately to the north-north-east of the highest continuous mountain mass in Scotland: that of the Cairngorm group, four summits of which exceed 4000 feet. The normal prevailing south-westerly winds undergo a certain degree of warming and drying on their descent from the Cairngorm region to the Moray-Nairn coastlands—theoretically, 4000 feet of descent could produce over 20° Fahrenheit of warming, though in fact this is much less in practice. Nevertheless the change is perceptible; and the more abrupt the drop from highland to lowland, the more marked the heating effect.

This is in all probability why the coastal plain of Moray and Nairn, backed immediately to the south by the steep highland edge, experiences better weather conditions. In hilly Banffshire, as we have seen, the plateau is more continuous; and the final drop does not occur until the coast itself, where the heating effect, in any case more gradual, is neutralized by the cold North Sea waters. Some would suggest a further element: a warm eddy from the Gulf Stream turning south past the Orkney Islands and curling into the extreme west of the Moray Firth; but I prefer to stick to the Grampian Mountain theory, for which there is some clear meteorological evidence.

Also—a very minor, but not entirely negligible point—the coastal dunes and morainic ridges of Moray tend to give a saucer-like topography to the coastal plain, excluding a little of the cold and damp from the sea and acting as a very modest 'suntrap'.

The physical variety of these northern coastlands is matched by accompanying contrasts in human geography. Most striking is the attraction of the warm sunny lowlands of Moray to outsiders. In Inverness visitors are numerous, but in terms of geography strictly nomadic, and of two kinds, summer tourists or pious observers of the rites of August 12th. Moray and Nairn also have their summer holiday-makers (in distinctly smaller and unobtrusive numbers), but much more prominent are the settled incomers: a retired population of some means, with more than a sprinkling of ex-Colonial or Service officers, who give to Elgin a faint and Scottish air of Cheltenham or Camberley. Moreover, despite the inaccessibility from Whitehall—fifteen hours by rail to London, whichever way one goes—the three Services also have large camps in the vicinity of Elgin; at Gordonstoun a few miles away there is Britain's most northerly Public School; and a recent arrival has been an offshoot of a Cistercian monastery from Gloucestershire. Consequently at weekends the streets of Elgin see a curious mixture of costume and accent: besides the varied civilian population, two shades of blue from Lossiemouth and Kinloss, the khaki of the Engineers, and the kilts of Highland infantry regiments, mingled with the rarer blue-grey of Gordonstoun boys. This strikingly cosmopolitan air must however be hardly new to Elgin, which has a "Maisondieu Place", a parish church which might be a twin to that of St Pancras in



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The Bullers (boilers) of Buchan: a granite rock formation on the coast south of Peterhead. At high tide the sea rushes through the cleft and into the 'Pot' like a boiling cauldron

London, and a Cathedral close that could fit unconcernedly into Barchester.

Nothing of this at Buckie or Macduff. The few uniforms to be seen are those of natives home on leave, and the local people are more used to moving south themselves, either for a permanent livelihood, or temporarily each year following the herring. Banffshire exports population rather than receives it.

The last, easternmost section of this northern coastland comprises the extreme north-east portion of Aberdeenshire. Here the Highland masses drop gradually to a plateau that has few really imposing heights, but is deeply scored by numerous shallow troughs or valleys, mostly the work of ice and glacial melt-water and now often without streams in them. This is Buchan: a green rolling upland, with long, bare shoulders, falling to a low-lying sandy coast in most areas, but occasionally fronting the North Sea in massive cliffs. The finest coastal scenery lies between Buchan Ness (just south of Peterhead, and the most easterly point in Scotland) and Cruden Bay. In one spot, where fault-structures have been enlarged by water and natural pneumatic action to form a series of magnificent coves, lie the Bullers of Buchan, an awe-inspiring spectacle of red granite cliffs and foaming water.

If we can say that Banffshire, by its harshness of terrain and climate, has proved rather too much for man's efforts, then Buchan represents a triumph of human patience and ingenuity. An intrinsically unrewarding countryside has slowly and persistently been transformed into what is now, with only an occasional exception, a highly productive farming area. Peat bogs have been drained—no small matter in a region of former indeterminate glacial run-off—surface rocks removed or piled in dykes, soil quality enhanced by careful crop rotation and extensive use of fertilizers, and shelter-belts of trees planted round the more exposed or richer spots. Several centuries of sustained labour have gone to the making of the Buchan landscape, with occasional severe setbacks, as in 1953, when in Buchan alone some half-a-million fully grown trees were flattened during a single January day. A slackening of effort, and the land quickly loses heart; not for nothing did one farmer-author speak of it as "the cold shoulder of Scotland".

The largest towns in Buchan are those two inveterate rivals, Fraserburgh and Peterhead. The former looks uncompromisingly northwards, ultimately, one might easily believe, into the Arctic Ocean: the latter is clustered round a small skerry jutting into the North Sea; and both get at least their due share of cold, wind and rain. In fact, I have heard natives speak disdainfully of the climate of Aberdeen as "relaxing"; and on my own regular visits to Peterhead I have only had two completely rainless occasions in seven years.

The two towns are, so to speak, mirrorimages: both live mainly by herring-fishing, with a migrant group of population that is equally familiar with Yarmouth and Lowestoft; both still receive the occasional Russian cargo-boat to load barrels of cured fish; and both have their food-processing factory—if Peterhead swears by Crosse and Blackwell, Fraserburgh can boast of its Maconachie Avenue. Here similarities end, for as a counterpart to the growing 'light' industries of Fraserburgh, there is only the labour performed by long-term convicts in the granite quarries of Peterhead. A genteel origin can, however, be claimed for Peterhead, which during the 18th century had some reputation as a spa; and in 1746 a young staff officer of the Duke of Cumberland's army came for a cure, following a heavy winter in the regimental mess: one Major Wolfe, later to be better known in Canada.

Today both towns find existence a little precarious, with ominous pockets of unemployment. The herring shoals are less predictable and less easy to sell when caught, and the district offers few tourist attractions. Moreover, a point may be reached when rising transport charges and the immense distance from markets may make food-processing uneconomic, even when set against the stability of local labour. At present it is the presence of abundant female labour which makes the shuttling of Italian tomatoes and English vegetables so far north and then back again an economic proposition.

Inland, however, it is another story. Over the last fifteen years the cattle, milk and root-crops of Turriff and Strichen have found a ready sale, as is indicated by the quiet prosperity of the countryside, with its large, well-kept and highly mechanized farms, trim roads and neat plantations. Once again geology takes a hand. Occasional patches of the same Old Red Sandstone encountered in Moray occur here and there, giving variety to the soil, and on these non-granitic formations it is said that grain can ripen ten to fourteen days earlier than elsewhere in Buchan.

Looking from these coastlands across the blue-grey expanse of northward-extending water, one can easily understand the emotion of the early sailors who here felt themselves on the edge of the world. The comfortable, familiar lands of Europe are left behind: Roman influence never reached beyond the Grampians, and Christianity was here a late arrival. Even the modern visitor can become aware of a slightly different atmosphere and tradition—at least this was my own experience after I got to know the north-east better. Just occasionally, there could be a strange, almost eerie impression: an occasional present-day hint of the continued existence of usages and ideas that one thought buried away in the pages of the *Golden Bough* and at a reassuring distance off in Moravia or Transylvania: harvest ceremonies, corn-spirits, bonfires, turnip-lanterns and the rest.

This countryside, like many others, has its legends of witches and warlocks, though by all accounts those of Moray and Nairn were reputed to be especially powerful and active, as Shakespeare made clear. The legend of divine wrath against the inhabitants of Culbin is not unique in Britain, since there is a broad counterpart in the Yorkshire story of Semmerwater; but it is more than a little surprising to find at Burghead, under the shadow, so to speak, of the B.B.C. wireless masts, a thoroughgoing pagan survival.

This is the clavie ceremony held annually on January 15, the Old Style New Year—no new-fangled Julian calendars for Burghead. A barrel-like structure is made each year of wood eventually to be filled with combustibles: tar, hemp, and kindling. This "clavie" is attached to a stout pole by means of a single iron nail, or staple, possession of which from year to year is the privilege of one particular family. A boy from this family has the right of carrying out the actual fixing, after which the clavie is lit, and then carried shoulder-high in procession from the fishing-harbour to a nearby hill, where a stone support has been erected to hold it. After some time the clavie is bowled violently downhill and disintegrates into a mass of blazing embers. These are seized by the spectators and carried down to the fishing-vessels, or displayed prominently in cottages as talismans for the coming year. It is known for the embers to be sent abroad to relatives and friends.

Rather similar observances are said to have taken place in the past at other fishing-ports of the north-east; and a fire-ceremony of a slightly different kind still occurs at Stonehaven, south of Aberdeen (this time on the modern New Year's Eve). Both observances would appear to be genuine pre-Christian survivals. There is no suggestion of a self-conscious or 'arty-crafty' 19th-century revival of a long-dead custom; and no background whatever of a tourist-catching intent—few would be attracted to either place on a winter's night. Yet the fire-festivals have survived the interdicts of mediaeval Popes and the strongly expressed disapproval of several Kirk Sessions.

Pony-Trekking in Scotland

by A. M. FERRAR

THERE are still many people who think of the Highlands of Scotland as one vast expanse of deer-forest, grouse-moor and sheep-run, with scattered crofts and shooting-lodges, and offering the holiday-maker little apart from deer-stalking and salmon-fishing. Perhaps there was a time when this was true, but a variety of other sports have taken root and are growing lustily. Skiing becomes yearly more popular and not a few of the members of recent expeditions to the Himalaya learned much of their mountain-craft on the Scottish hills. Of late years the Scottish Council of Physical Recreation has taken an interest, and is doing a great deal to bring holidays in this wild, unspoiled and often very lovely country within the reach of a wider public. It organizes skiing, fishing, sailing and climbing holidays and welcomes beginners at all these sports equally with the more experienced. Most original of all, it has developed the delightful pastime of roaming over the hills on the sturdy ponies whose ancestors have lived here since before the dawn of history, probably since the end of the Ice Age. Indeed it is thought by some that they had established themselves during an interglacial period and were able to survive the last advance of the ice-sheet in some of the Western Islands. Be that as it may, it is reasonably certain that some were taken from the west of Scotland to Iceland when it was first settled a thousand years ago.

These ponies, known in Gaelic as "garrons", are comparatively small, about 14 hands to 14 hands 2 inches high (a hand is four inches and the height of a horse is measured at the withers), but compact and up to a lot of weight. While the smaller of them make excellent children's mounts the larger are quite capable of carrying a heavy adult. During the deer-stalking season they are used as pack-ponies, and a single pony may, on occasion, bring down as many as three stags (weighing about fifteen stone each) from the hill. They are quiet, steady and easily handled, and can cover considerable distances at a modest pace. They are not capable of any great speed, and fast riding is in fact discouraged, for various reasons, not the least of which is the roughness of the country. Riding a mountain pony is not, however, without its excitements, for the more competent the riders the steeper the hills over which they are led, and it is possible to find some really hair-raising slopes, liberally scattered with boulders and with the odd patch of bog here and there. The facility with which they are tackled is a revelation, and generally it is wise to trust one's mount implicitly, for usually he knows more about the game than his rider will ever do. When I first went to Newtonmore I would sometimes decide that there was an easier way than the one my pony was taking. I was almost invariably wrong. A good pony can seldom be induced to go onto really boggy ground, so that one is often safer mounted than on foot.

It was in 1952 that a member of the National Parks Committee first suggested that parties of riders should be led out into the glens and hills, and as a result the first treks were organized that summer, using as a centre Newtonmore, a pleasant village near the head of the Spey valley and the first place reached by the main railway line on its descent from the Grampian Mountains after crossing the Pass of Drumochter (1484 feet), the highest point reached by a railway in the British Isles. In 1953 a full season was arranged at Newtonmore from April to the end of July. It had to end before the beginning of deer-stalking and grouse-shooting in August as most of the routes led over private land, and the game would otherwise have been too much disturbed.

In order that riders may see the best of the country they are visiting without laying themselves open to the difficulties which can sometimes beset newcomers to the hills they are always accompanied by a guide. Only on the rarest occasions can a pony-owner be persuaded to lend animals to people wishing to go off on their own and then only if he is quite certain they will be able to look after themselves and their mounts. Distances of anything between five and twenty-five miles may be covered each day, depending on the ability of the riders and the severity of the terrain. Two parties are usually organized, consisting of those who have ridden before and those who have not. There are usually quite a number of the latter, for this is one of the best ways of acquiring some skill with a minimum of formal instruction. The guide

The British Travel and Holidays Association

In the Scottish Highlands pony-trekking is now popular among holiday-making Scots and Sassenachs alike. Here a group of riders from Newtonmore is climbing Creag Dhubh. Below winds the River Spey and beyond, to the south-east, the Grampians begin. Only experienced riders take this trek

with beginners' parties is, of course, also an instructor. By the second day beginners are able to go out for a short ride, and distances are gradually increased until by the end of the week they are often able to go about fifteen miles without discomfort.

At Newtonmore the most spectacular ride comes at the end of the week when riders are well acquainted with their ponies and more or less used to steep slopes. It consists of the ascent of an elongated hill 2300 feet high, lying to the west of the village. Ever since our arrival we had been hearing highly coloured accounts of the thrills and perils of Creag Dhubh (the name is Gaelic and means Black Crag), so when the great day dawned we were in a suitably awed frame of mind. At first we rode south-westwards along the road leading to Loch Laggan, the meadows of the Spey valley on our left hand and, after the first mile or two, the wooded lower slopes of Creag Dhubh on our right. When we reached the south-western end of the hill we left the road, and Jock, our guide, enjoined us to be sure to tighten our girths properly lest a saddle should slip at some crucial point.

tographs by Catharine M. Leader

The pony-trekking centre at Newtonmore in Inverness-shire, started in 1952, is, like several other centres, flourishing; it provides a most interesting way of seeing the Highlands and also affords instruction in riding over difficult and exacting terrain. (Above *and* opposite, top) *The sturdy Highland ponies which, though small, have great endurance, are brought to the pony-lines for grooming and saddling; normally they are turned loose in the fields when not being ridden. In the winter they move to a more temperate climate further down the valley.* (Left) *Which end is which? A beginner is faced with the problem of bridling Eila, the oldest and sedatest of the Newtonmore ponies.* (Opposite, bottom) *An instructress demonstrating how to tie up a pony so that it cannot pull away yet can be released quickly*

Then we started a steady climb, not very steep at first but becoming progressively stiffer as we left the trees behind.

It was a clear sunny day and as we got higher the view became more and more magnificent. At a particularly awkward spot the Mad Doctor decided he would rather walk and handed his pony to Jock to lead. Jock simply tied the reins up so that they could not become entangled with its feet and let it go, knowing it would keep its place in the line and give no trouble. We had christened the Mad Doctor several days ago: he was a medical man who knew a great deal about riding, in theory at least. But his practical skill did not measure up to his theoretical knowledge and we had once seen him bucked off by a young pony which he had mounted so suddenly that it wondered what had hit it. Now he was jogging on ahead, wearing a foxy-coloured tweed suit, and it was not long before a cry of "Tally-ho", followed by a very passable imitation of a hunting horn, burst from the back of the line. It came from the lips of the Galloping Major, so called because he wore fine whiskers and had enlivened some of our earlier rides by bellowing orders for a cavalry charge at unexpected moments.

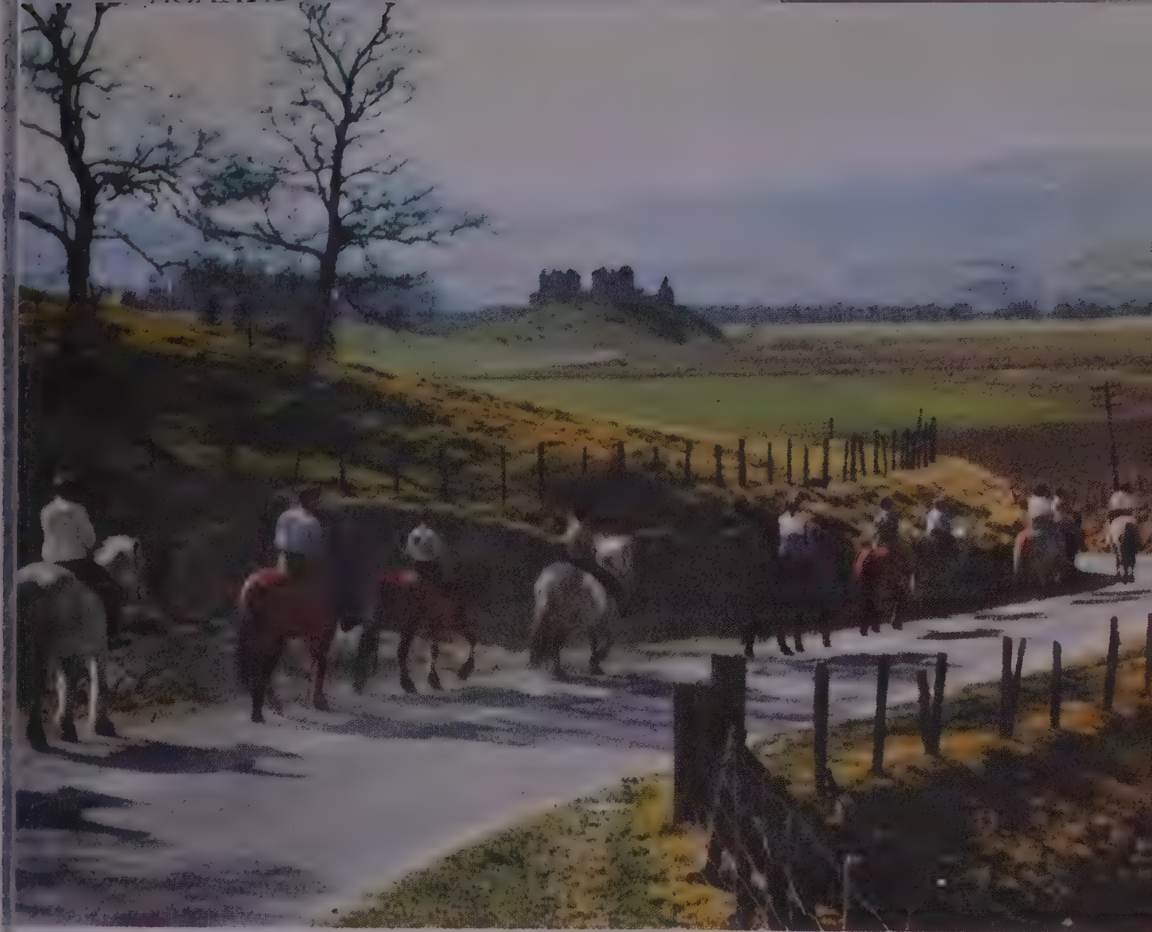
Just before we got to the top we stopped for lunch in a sheltered hollow. The ponies were given their nosebags and we settled down to munch sandwiches and enjoy the view which included the Cairngorms in the east, still in July bearing a few small patches of snow, the Grampians in front of us and away to our right the Western Highlands. We should have been able to see Ben Nevis, but clouds rolling in from the Atlantic concealed it. The route went straight on over the summit and down the other side, where the slope was no steeper than it had been coming up, but viewed from above it looked almost precipitous. We went on down, zig-zagging in some of the steepest parts, and one strong man admitted to shutting his eyes as his pony faced directly downhill at the end of each zig-zag. Suddenly there was a squeal and Betty slid gracefully down her pony's neck, landing on the grass in front of it. The saddle had slipped forward and was now on the pony's neck, though still securely anchored behind its forelegs. She got up and resaddled.

"You should tighten that girth better," called Jock; "I can't," replied Betty. "In any case it would cut Fiona in half if I did. The trouble is she's got no withers. Why don't you put a crupper on the saddle?" "Ay, to be sure, then you would pull the poor wee animal's tail off." Eventually we got down, though not before Betty had had a second spill. At the bottom the Calder had to be forded, and we were soon back in Newtonmore for a late tea.

When there is a sufficient party of experienced people it is usually possible to arrange longer treks starting from Newtonmore, and spending two nights in camp before returning to the hotel. These longer rides usually begin by going southwards and then make a broad sweep to the west, passing close to Loch Ericht and Loch Laggan and finally returning eastwards. No part of this route lies along a road, often it follows old hill tracks, but much of the way lies over the open moors. Last year, by way of an experiment a party rode from Newtonmore to Braemar for the Highland Games, going by way of the Lairig Ghru, right through the heart of the Cairngorm Mountains, and taking three days to complete the journey. This route passes some of the fine north-facing corries carved by glaciers of a bygone age in the pale pink granite of which the whole of the Cairngorms is made. The rocks of which the rest of the area is composed are mainly gneiss and schists, and it is their complete impermeability to water which accounts for the presence of bogs in hollows at quite high altitudes.

I have described pony-trekking from Newtonmore because that is the area which I know personally, but there are a number of other centres that have been started as a result of Newtonmore's success. In 1954 there were three; by 1955 the number had risen to nine and this year there are twelve. Most are able to arrange a longer season than is possible at Newtonmore; a few even offer facilities throughout the year. They are in various parts of Scotland: some are in the Highlands, some in central Scotland and some in the southern uplands. Perhaps Aberfoyle should be specially mentioned as it is well placed for the Trossachs. The one at Biggar in Lanarkshire is notable for the fact that it uses Fell ponies, which are similar to the Highland ponies but are black whereas the latter are usually dun.

It is invidious to try to choose between these various centres. Almost all are based on a comfortable hotel, though one Youth Hostel is now organizing parties. To judge from the success the pioneers are enjoying it seems that this type of holiday will steadily increase in popularity and more centres are likely to be established, so that in time pony-trekking may come to play a not insignificant part in the tourist economy of Scotland.



Ilford colour photographs by Catharine M.

bove) *A group of riders return- from a trek to the south of Spey valley, in the direction of Cairngorm mountains. Stand- above the Spey is the ruin of 18th-century Ruthven Barracks. ing parties usually consist of ut fifteen people, with a guide nstructor ; once they have some erience, riders can make trips up to twenty-five miles a day.* ght) *Journey's end : the pony given a final tit-bit before it et out in the fields at night*

Offering to the Sea

A Javanese Fishermen's Celebration

by KAY MANDER

Fishing is the chief livelihood of the villagers of Tawang. Achmad steers a small fishing perahu. *These boats are built entirely of wood since the Javanese fishermen think it unlucky to use metal in constructing them. They have no keel and can sail only before the wind*

All Ektachromes by the

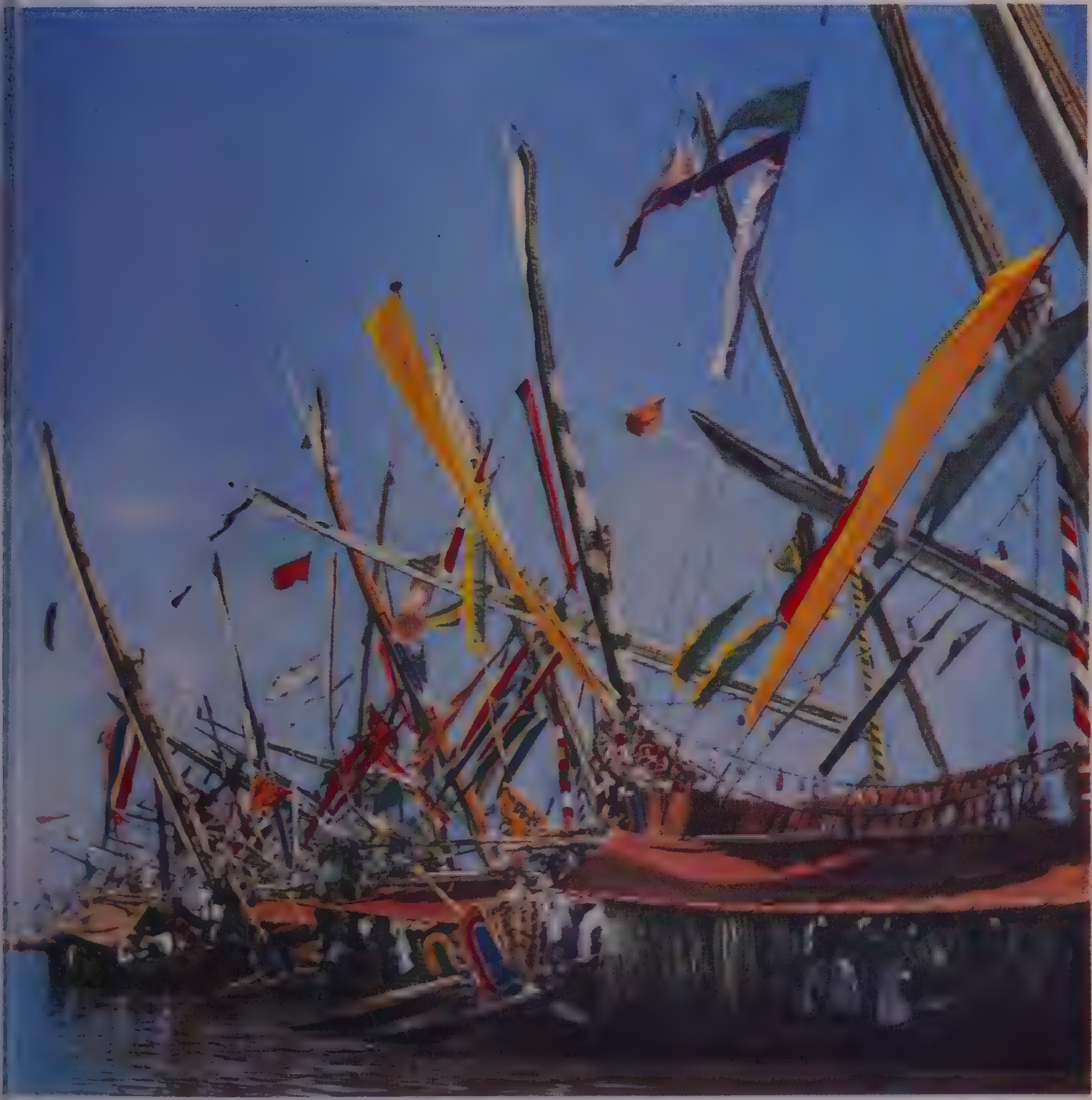
TAWANG is a fishing village on the north coast of Java between Semarang and Pekalongan, clustering under its palm-trees on the east bank of the Kali Kuto, a shallow, sluggish, coffee-coloured river which wanders into the sea a mile or so further on.

I lived in Tawang for three months in 1954, making a film for children. While I was there the fishermen held a celebration, an annual event marking the start of the new fishing season. There would be a *selamatan*, they told me, and also a *njadran laut*. "Selamatan" I already knew; it is the ceremony attendant on all important events in Moslem parts of Indonesia: birth, circumcision, marriage, death, building a house, even shooting a film—a ceremony of prayers and special food eaten by invited guests, to ask a blessing on the new venture. "Njadran" was a new word for me and the fishermen explained that it meant an offering, in this case to the sea. They told me the legend of Kjai Djenggot, the "Holy Bearded One". Long, long ago, it is said, he lived on this coast and the people of Tawang are descended from him. There is no trace of his house now, the fishermen said, but it was close to the gnarled old kapok tree, the one standing by itself on the seashore; beside it you could still see the well from which he drew water. In Tawang there is a *penghulu*, a priest, of Kjai Djenggot and every year he ensures that the njadran laut, the offering to the sea, is made to honour the fishermen's patron and seek his goodwill for the coming year.

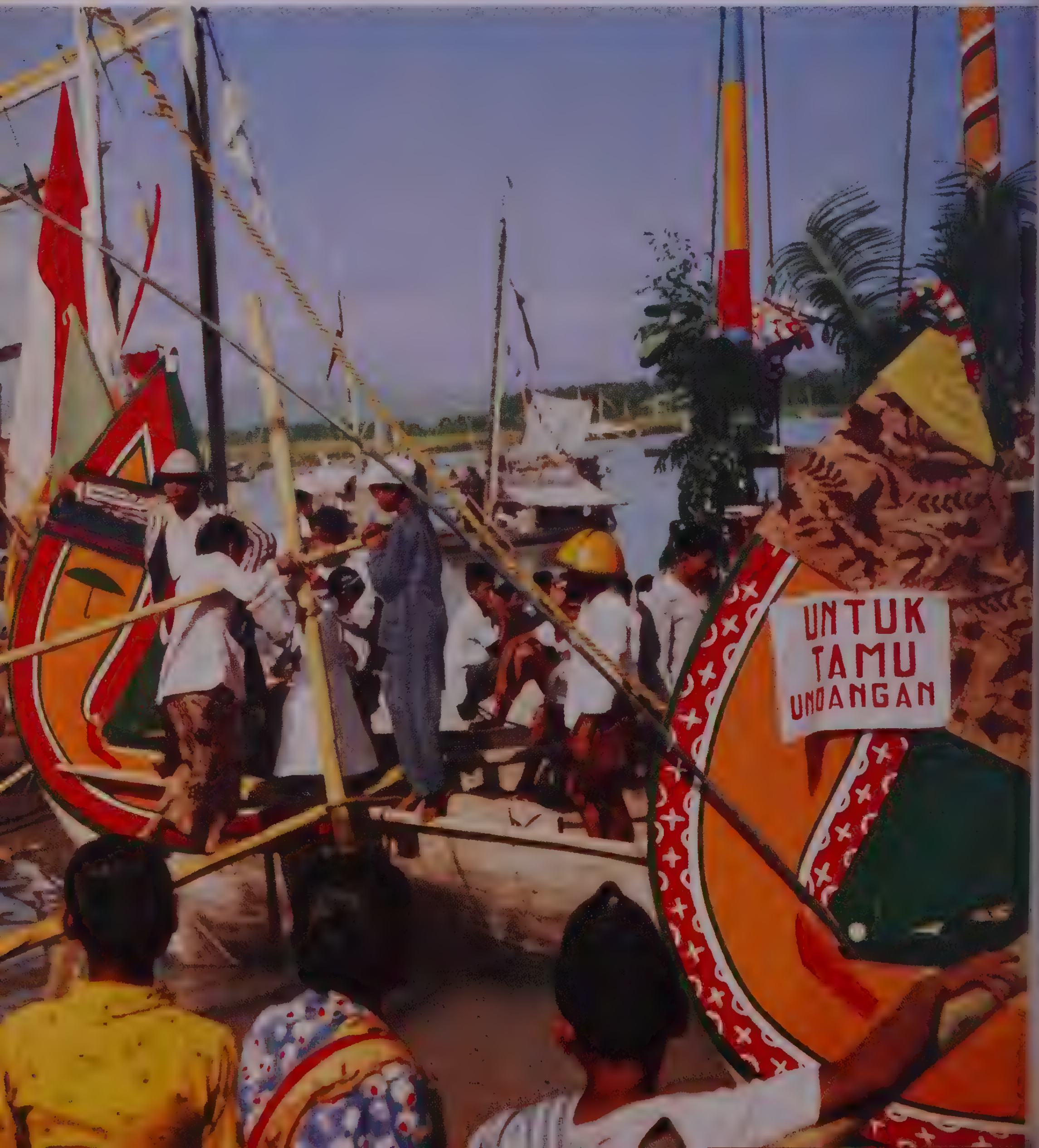
The annual celebration in Tawang, then, is a mixture of Moslem ritual and Javanese animism. But like so many ancient rites it serves a very practical purpose. For weeks before the event the fishermen renovated their boats, repaired sails, made new masts and booms, replaced broken wood, painted and decorated. By the day of the festival, at the end of August, all the boats were in perfect order for another year's work.

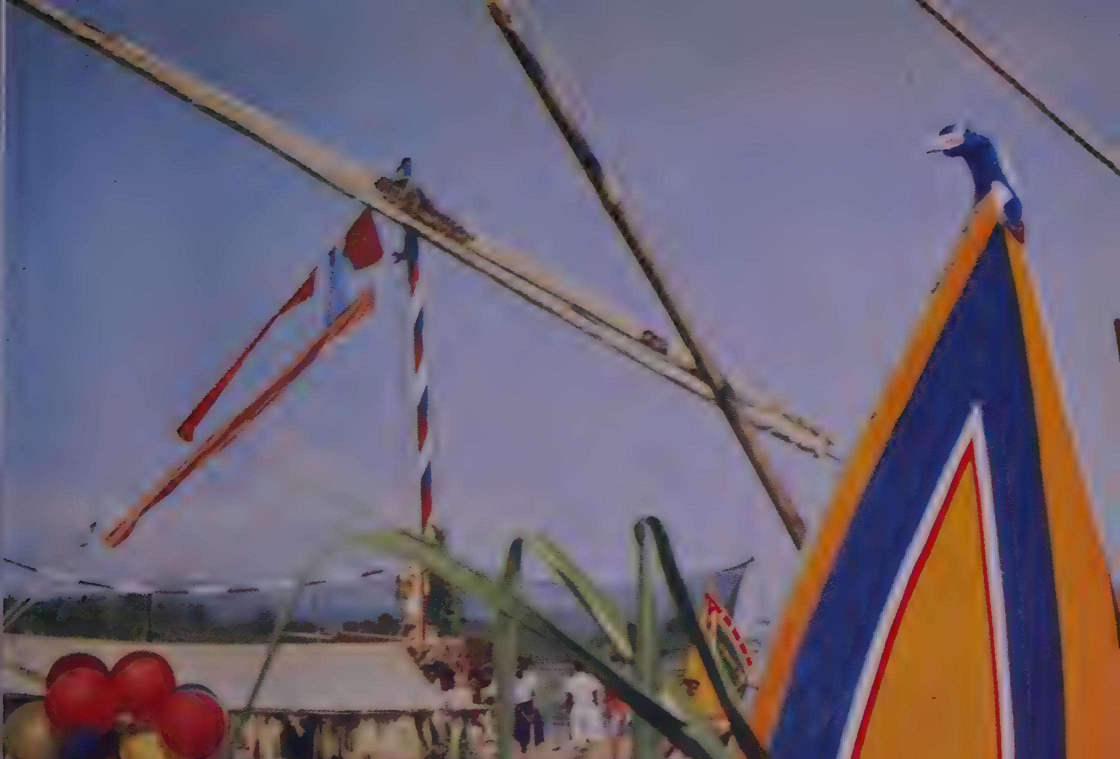
Flags were flying everywhere as visitors started to stream into the village. Pedlars were selling cold drinks and snacks, paper streamers, rattles and coloured balloons. One by one the boats filled with passengers and sailed off downstream to the narrow spit of land between the river and the sea where the selamatan was to take place. I joined the procession in a small motor-boat, one of our film 'props'. It seemed out of place among all the sails and I was a little uneasy at intrud-

On the first morning of the festival the boats line up, waiting for visitors. New paint gleams, pennants of all shapes flutter in the breeze and the sun flashes on the pieces of mirror sewn to many of the flags. These are large perahus, over thirty feet long, carrying a fishing crew of sixteen or more. The booms, with their furled sails, are now hoisted to the mast-tops, from which they hang suspended at the centre with one end lashed down forward. They are made of graduated lengths of bamboo bound together by rattan lacings. Coconut-palm leaves, stripped of all their hard ribs, hang in a soft pale-green fringe from the awnings. Orange crush and lemonade bottles make a gay decoration and will be useful later on



From seven o'clock in the morning visitors stream down to the boats. Some pay a small sum for a seat, while others use the boats marked by the sign shown here: "For Invited Guests". Normally the fishermen use only one or two bamboos to cross to the shore but for the benefit of guests, particularly the women in their tight kains, *the gangplanks have been widened and handrails added. The boat on the left is called* Pajong, *which means "umbrella", as the symbol painted on its bow shows*

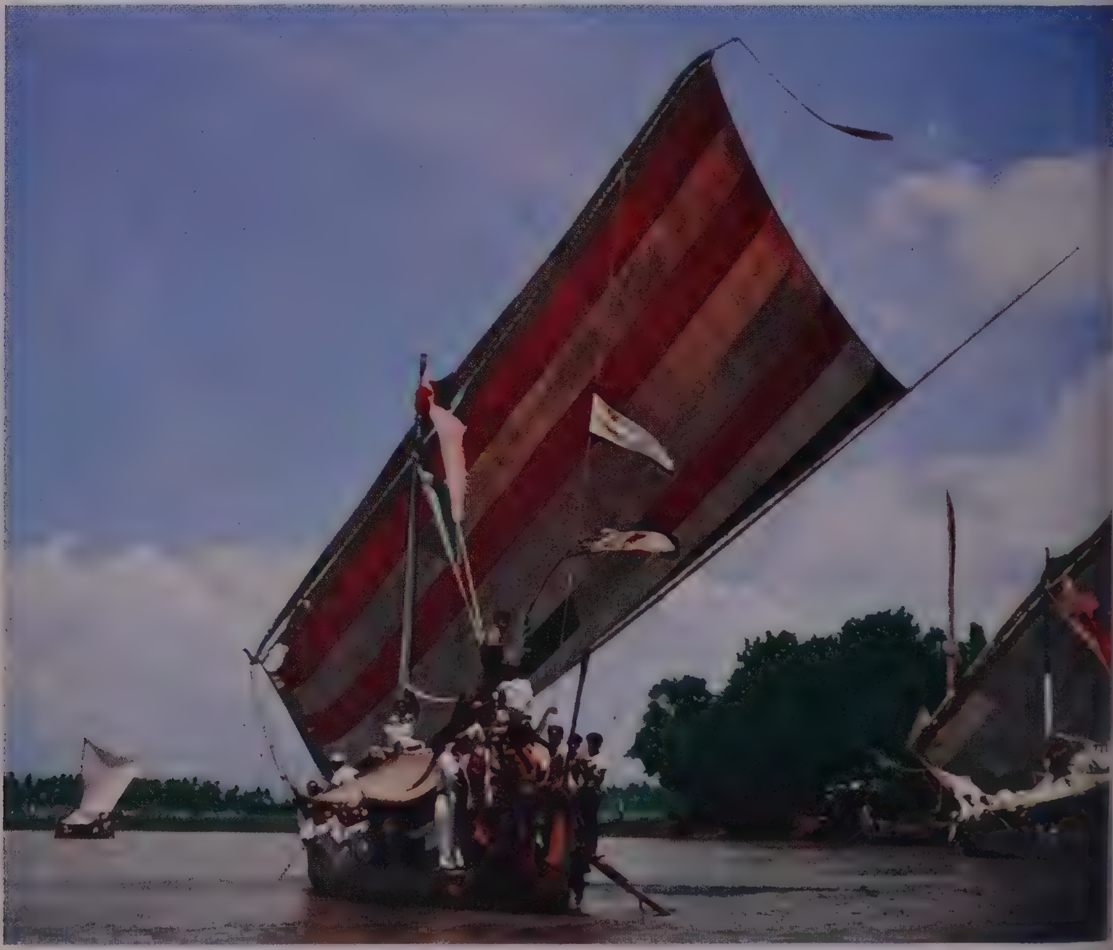


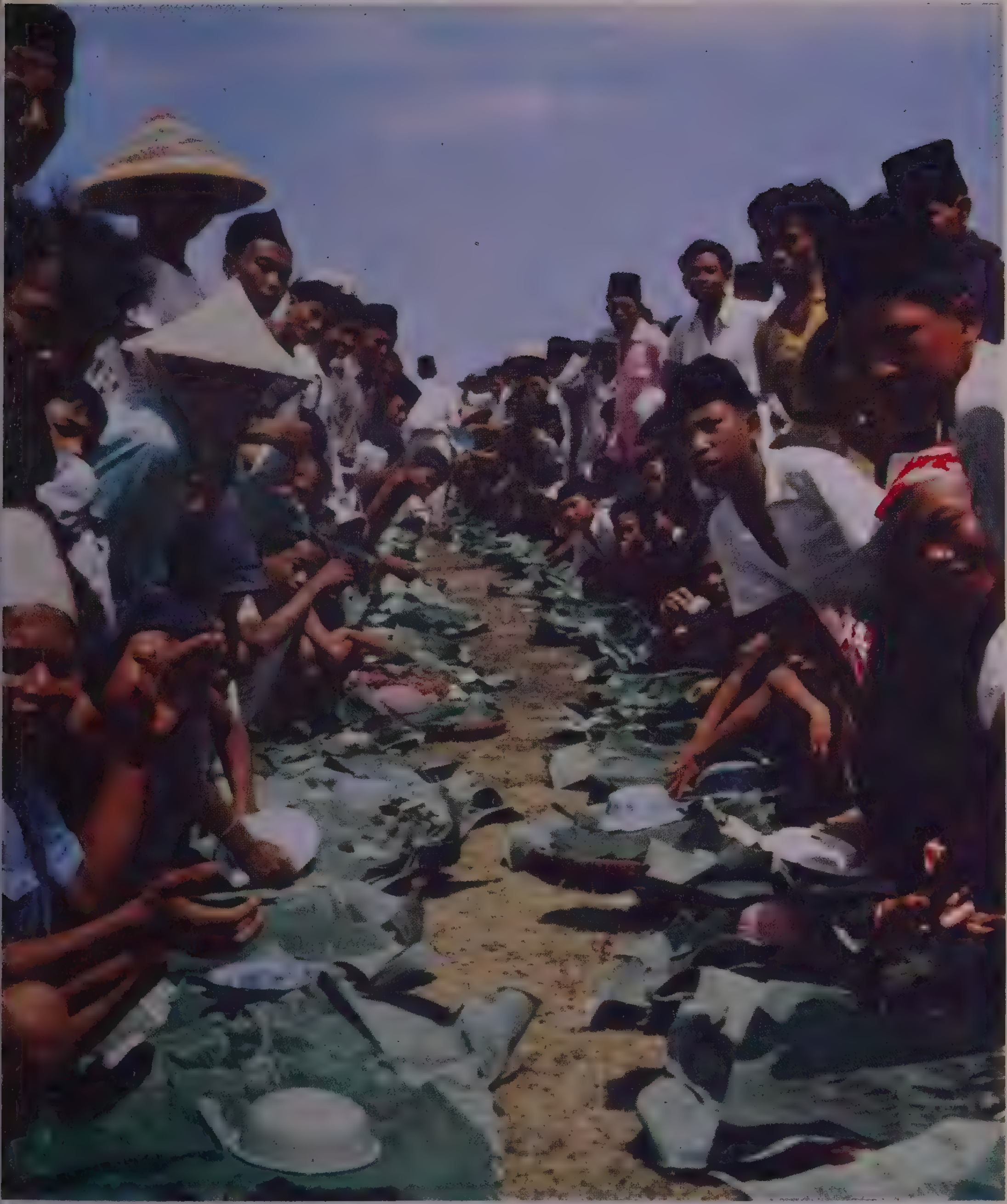


Another view of the decorated boats lying in Tawang harbour. Affandi, the Javanese boy with the balloons, decided that the film-unit's motor-boat was altogether too dowdy and he busied himself remedying its shortcomings. The carved bird perched on the prow of the boat in the foreground is unusual, but is probably related to the name of the vessel. The traditional pattern painted on the bows of perahus is reminiscent of the eye motif that is found on boats in many parts of the world ing to take photographs; however, the motor repeatedly broke down and all our acquaintances shouted encouragement as they sailed past, so clearly nobody minded my presence. I noticed that many of the crews had painted their pudding-basin hats in matching colours, and the crew of one boat were resplendent in new pyjama-suits, orange with black spots like leopards.

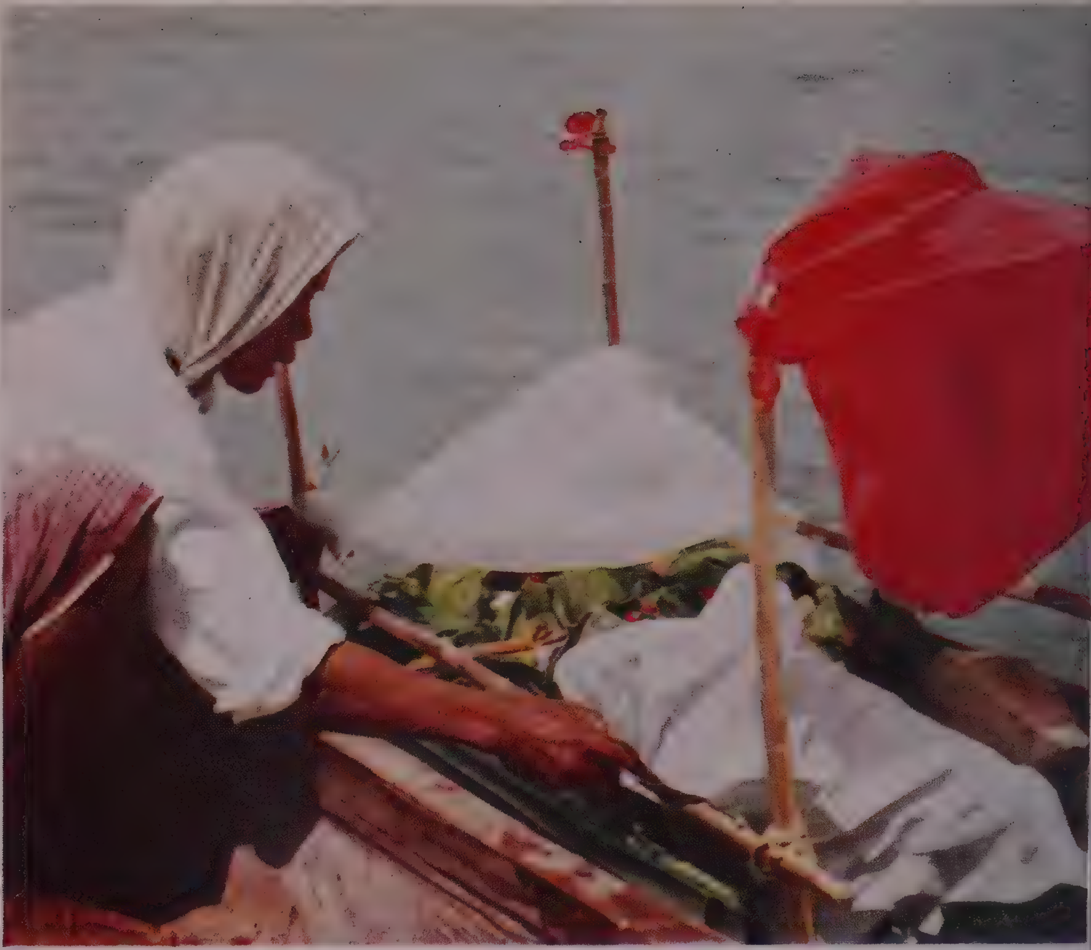
The previous night, I knew, a white bull had been killed; white animals only were used for Kjai Djenggot. The meat was for the selamatan and the head would be part of the *sjarat*, the ritual offering for the njadran laut. On the already-crowded spit I saw a railed-off enclosure with bowls of *gulai*, spicy stew made from the meat, one bowlful for the skipper of each boat. For the special guests who would share the selamatan, places were set in two lines. I was busy taking pictures when someone said that the njadran was about to begin. Assuming that the offering would be made from one of the big *perahus* (the "praus" of the Malay Archipelago), I splashed out to a small boat and scrambled on board, hoping to get close enough to photograph the ceremony. To my embarrassment I found that I had gate-crashed the boat from which the offering was actually to be made. There were the penghulu, a gentle old man with a towel over his head, women of his family with babies, two fishermen rowing—and the sjarat itself. It was laid out on a raft of banana-palm trunks, and the white bull's head was wrapped in a clean cloth from which peeped the damp nostrils and one long-lashed

Bedja Untung—*both words mean "lucky"—sails down towards the river-mouth, to share in the annual ceremony, part Islamic, part animistic, of making an offering to the sea to ensure a successful fishing season. The number of people on board is clearly much greater than the normal crew!*





The banquet for the selamatan, *or festival, laid out on the sandspit. Banana leaves cover the food and the inverted enamel bowls are set for the guests. These men are fishermen and visitors who crowded into the picture. At the time of the ceremony they will give way to the special guests, who include the village headman, officials of the fishermen's cooperative, boat skippers and some other local personalities*



The penghulu *with the offering. Kjai Djenggot, the fishermen's legendary patron, selects his priest himself, making his wish known to one of the villagers in a dream. Once appointed, a penghulu remains in office as long as the fishermen enjoy reasonable catches and freedom from trouble*

eye. Round it were neat little banana-leaf containers with the other ritual food: rice, tiny biscuits and other things.

Our boat reached the uneasy patch of water where the muddy river mixed with the clearer sea; one of the fishermen jumped overboard while the other lifted the raft onto the water. The penghulu held it for a moment, praying softly, then pushed it away for the tide to carry it gently over the waves towards the open sea. We rowed slowly back to the spit where the selamatan was already over. The skippers were going back to their boats, each carrying a bowl of gulai to share with his crew. One by one the boats set off upstream back to Tawang. Sails were useless now; rowing was difficult with such heavy loads and frequent collisions added to the growing gaiety. Back in the village everyone settled down to two days of holiday-making. There was a fair, with dancing, gambling games and a greasy pole; whoever could climb it could collect a complete wardrobe of new clothes at the top—if he could stay there long enough. With darkness came the music of a gamelan orchestra, signalling the start of the night-long performance of *wajang kulit*, the traditional shadow-play. I wondered if Kjai Djenggot would approve of the contribution we had been asked to make to the festivities—but the audience that turned up for our open-air film show seemed to prove that the villagers of Tawang did not share my doubts.

Explorers' Maps

XIV: The Polar Regions in the 19th Century

by R. A. SKELTON

With this article the Superintendent of the Map Room at the British Museum concludes his series presenting, in regional order, some episodes in the history of exploration for which the evidence of maps is specially interesting or accessible. While the text is intended to be read as a commentary on the maps and not as a connected history of discovery, it contains with its illustrations much unpublished material and the re-issue of the series in book form is therefore proposed

The interaction of maps and discovery, of geographical ideas and geographical experience, is strikingly illustrated in the history of exploration in the Polar Regions. From the 16th century onward cosmographers, developing mediaeval patterns of the division of the earth's surface between land and water, conceived the Arctic as an ocean (and therefore perhaps navigable), the Antarctic as a continent (and therefore perhaps habitable). Globes and maps on polar projections displayed the distribution of land and water, in high latitudes, in a relationship which encouraged geographical conjecture and commercial enterprise: in the north, a sea almost, but not quite, enclosed by the land masses (the "Heartland") of the northern hemisphere—in the south, a continent surrounded by the "embracing ocean" (Fig. 1). These ideas were in essence correct, but the hopes built upon them and vainly tested by many arduous voyages were delusions. The 16th-century mapmaker, in the absence of information from experience, could not visualize the physical conditions which controlled navigation within the polar circles, and the sanguine Tudor projector was able to hold "no land vnhabitable, nor Sea innauigable". The search, lasting 300 years, for northern seaways from Europe into the Pacific was disillusioning, for in the age of sail the Arctic could offer no commercially practicable "waie of the northe"; and Cook, the first European seaman to cross the Antarctic Circle, concluded that the continent which he conjectured to lie behind the ice masses to the south must be of so forbidding a character "that the world will derive no benefit from it".

Even if, for want of the means to attain it, the objective came to seem not worth the toil, the quest itself produced some notable records of human endeavour. The high latitudes reached by navigators in the age of sail testifies to their skill and courage. The furthest north was attained successively by John Davis in 1587 (72° 12′, in Davis Strait), Henry Hudson in 1607 (80° 23′), C. J. Phipps in 1773 (80° 37′), William Scoresby in 1806 (81° 30′), and W. E. Parry in 1827 (82° 45′; the last four all to the north of Spitsbergen). In the south, Cook in 1773 reached the latitude of 71° 10′ S in longitude 106° 54′ W, and in circumnavigating the Antarctic Continent he sailed over 125 degrees of longitude to the south of the 60th parallel. His work was continued by the Russian commander F. G. Bellingshausen who in 1820-21 traversed no less than 242 degrees of longitude south of 60° S (Fig. 3).

The first authenticated—because correctly charted—discoveries of sub-Antarctic lands were those of South Georgia and the South Sandwich Islands by Cook in January 1775 (Fig. 2). Bellingshausen was the first to sight land (Peter I Island) within the Antarctic Circle, and in January 1820 (in 78° W) he was within thirty miles of the continent, which fog prevented him from seeing. Cook firmly believed in the existence of the Antarctic Continent which he never saw, maintaining "that there is a tract of land near the pole that is the source of most of the ice that is spread over this vast Southern Ocean". Since however "the greatest part of this Southern Continent must lie within the polar circle", he concluded that "the lands which lie to the south will never be explored" and indeed that "to judge of the bulk by the sample [South Georgia], would not be worth the discovery". He could see no other inducement to exploration further south than his own "ambition not only to go farther than anyone had been before, but as far as it was possible for man to go".

Yet it was Cook himself who, by his report of the numerous whales in Magellanic waters and of the seal rookeries on the sub-Antarctic

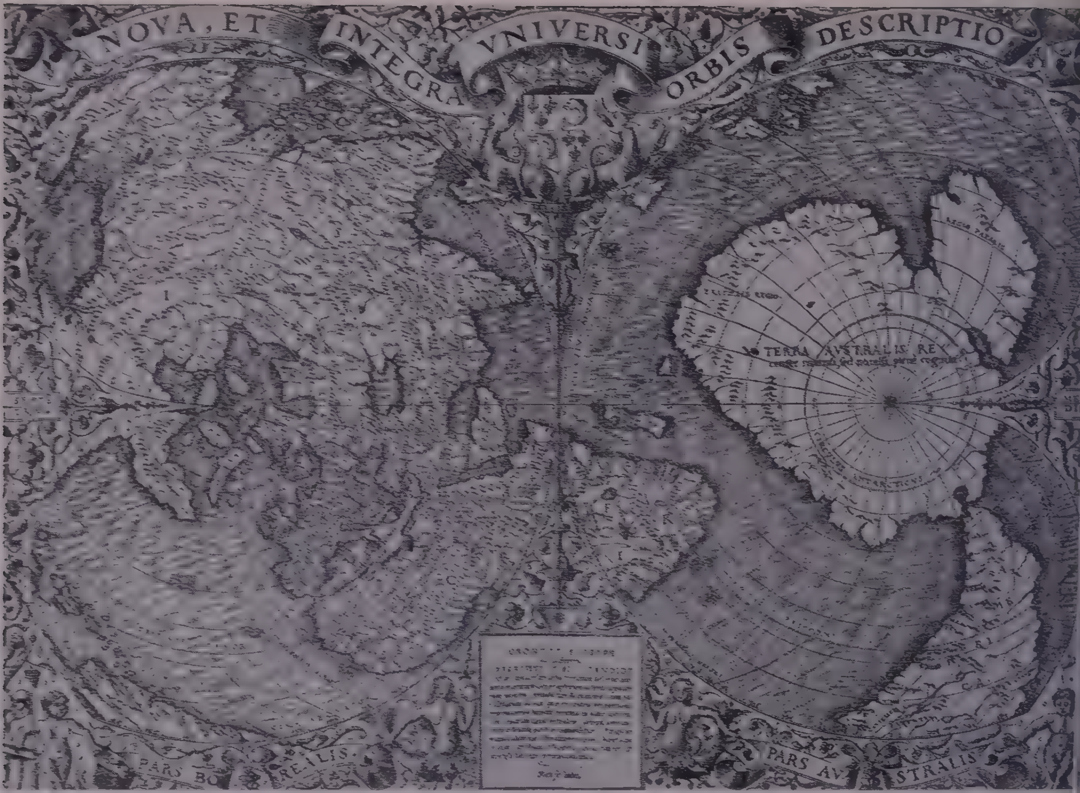


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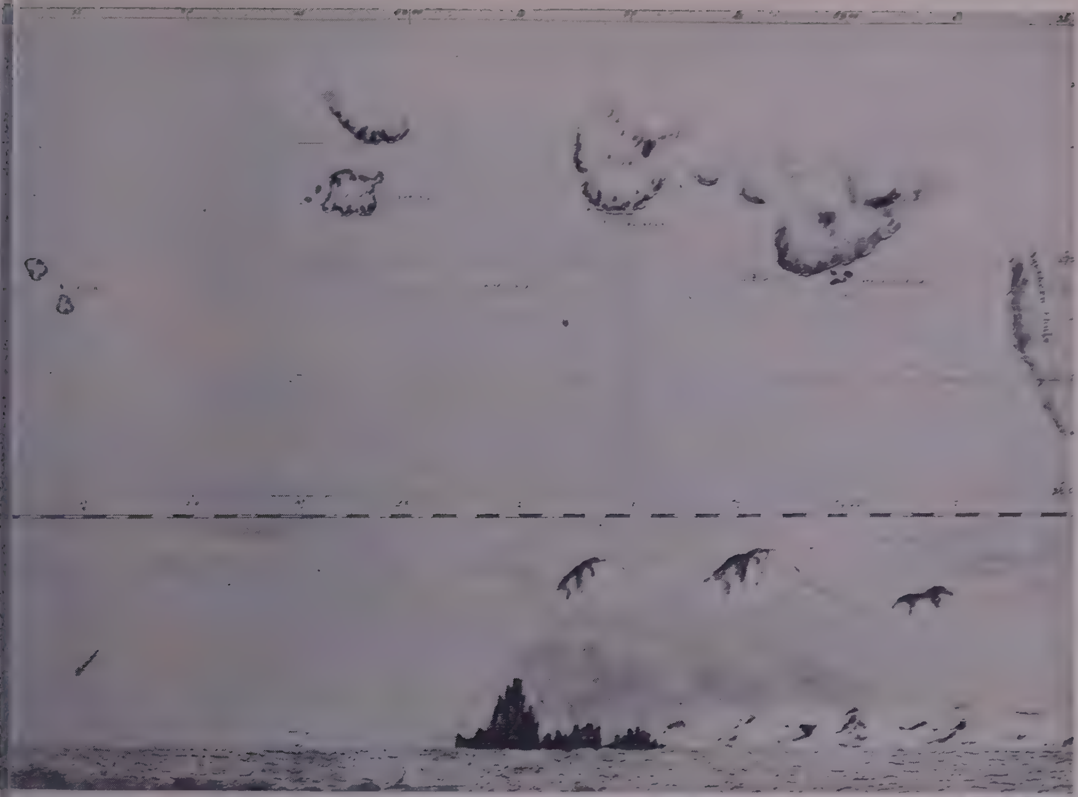
Fig. 1 The hemispheric world map by Oronce Finé (1531) reflects 16th-century ideas on the distribution of land and water. Land masses of the northern hemisphere, almost encircling an Arctic sea, are balanced by an immense southern continent "lately discovered but not yet fully known"

islands, drew attention to the chief source of wealth to be found in southern waters. In 1785 the English firm of Enderby sent out its first ships to hunt the sperm whale in the Pacific, and from the first decade of the 19th century sealers from New England were working the beaches of the islands discovered by Cook. To the whalers and especially the sealers, constantly searching for new grounds after they had exhausted the old, were due the next important discoveries in Antarctica.

In February 1819 William Smith, skipper of a north-country brig, sailing wide round Cape Horn, sighted land in 62° 40′ S, 60° W. Later, in November of the same year, he revisited "New South Shetland", observing "seals in abundance" and assuming it to be part of the Antarctic Continent. Back in Valparaiso, "with the honest feeling of an Englishman" he reported his discovery to the British naval commander, who chartered his ship and sent it, with Edward Bransfield R.N. as master, to survey the newly found land (Fig. 4). In January 1820 Bransfield and Smith sailed south from the South Shetlands and in 64° S fell in with land which they named Trinity Land, now Trinity Peninsula on Graham Land (Fig. 5). The conjectural easterly extension of Trinity Land ("Supposed Land"), drawn on Bransfield's chart, illustrates the persistent expectation of continental land in this area. This first landfall on the Antarctic Continent was quickly followed by that of the Connecticut sealing captain Nathaniel Palmer, who in November 1820 reached Trinity Land ("Palmer Land") in a latitude of 63° 45′ S and on his return north encountered Bellingshausen's two ships on their way to survey the South Shetlands (Fig. 3). (Bransfield's claim to the discovery of the peninsula now named Graham Land has been disputed on the somewhat far-fetched hypothesis that the charts which he and Smith deposited in the Hydrographic Office of the Admiralty were 'faked'.) In 1821-2 Palmer accompanied the English sealing captain William Powell when he discovered the South Orkneys.



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(*Fig. 2:* above) *The South Sandwich Islands, named by Cook in January 1775 Southern Thule, "the most southern land . . . yet . . . discovered".* (*Fig. 3:* below) *The meeting between Palmer's sealer* Hero *and Bellingshausen's two ships on January 25, 1821, off Deception Island in the South Shetlands*

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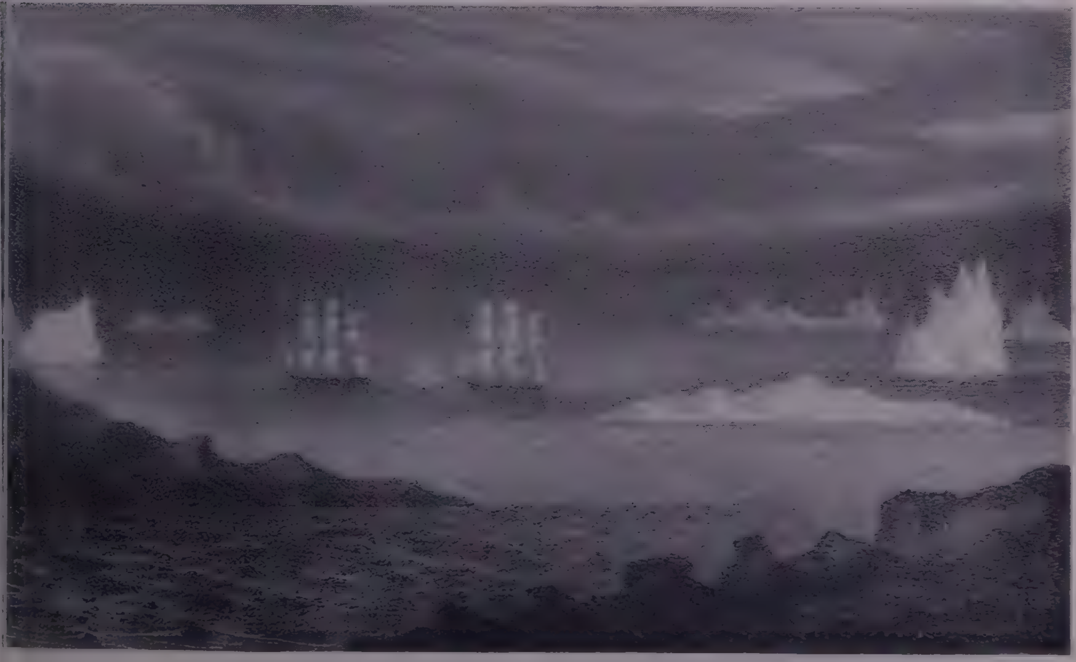
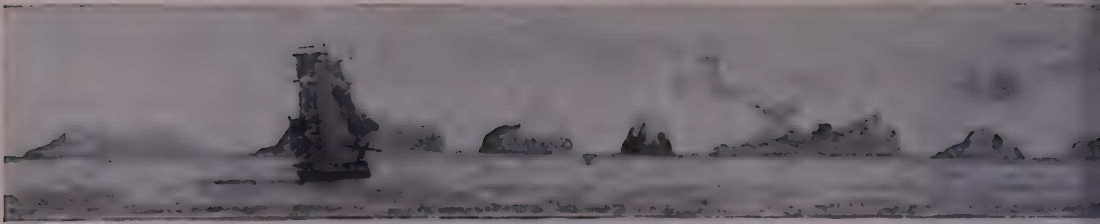
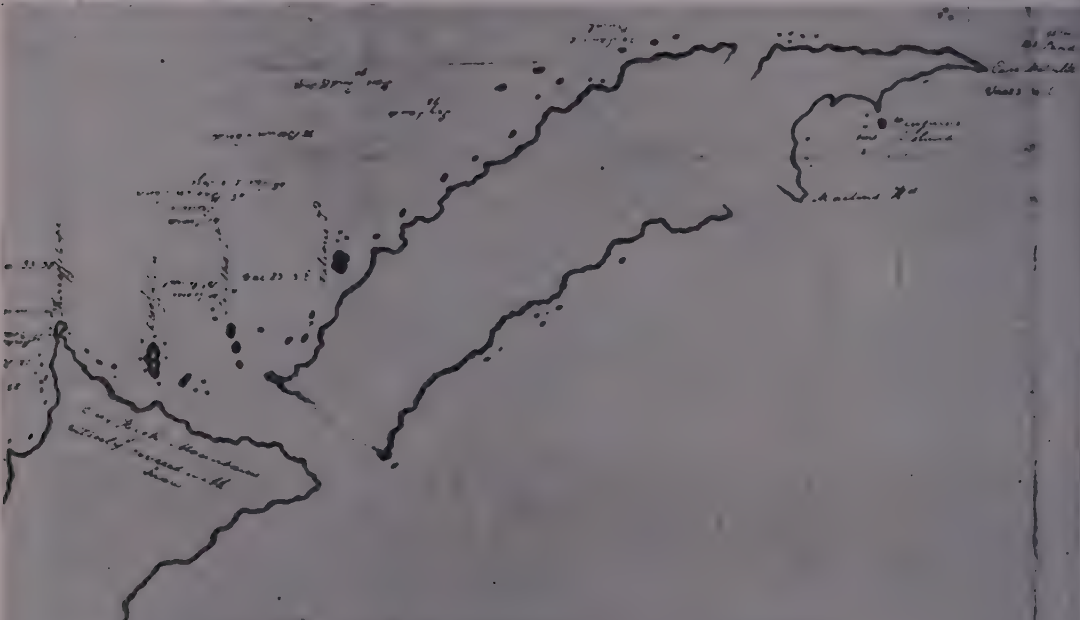




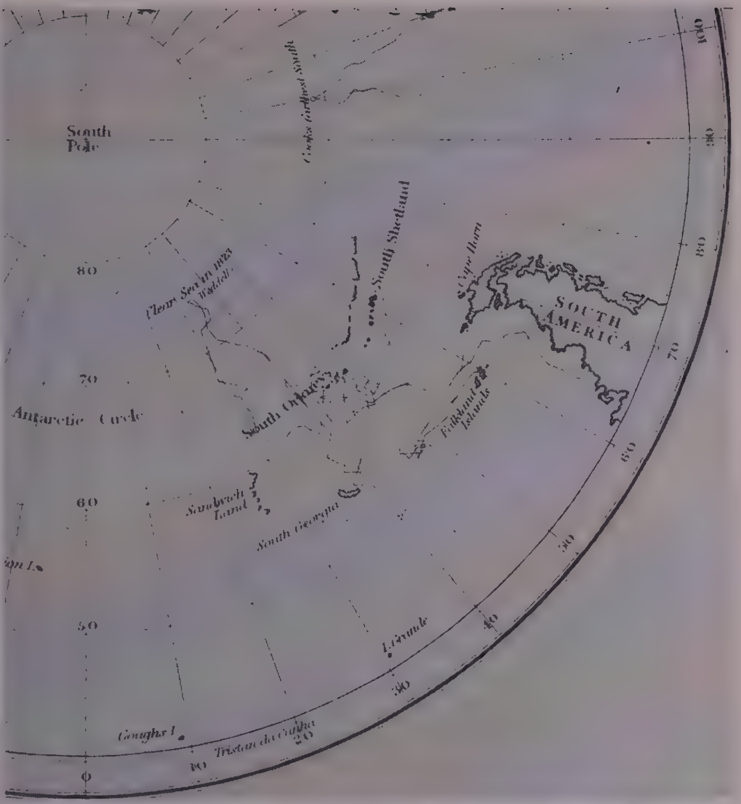
By courtesy of the Hydrographer of the Navy

(*Fig. 4:* above) *The brig* Williams *of Blyth, William Smith master, approaching the north coast of the South Shetlands in January 1820.* (*Fig. 5:* below) *Chart of "New or South Shetland" drawn by Bransfield on his voyage in the* Williams, *with (in the south) "Trinity Land partly covered with snow"*

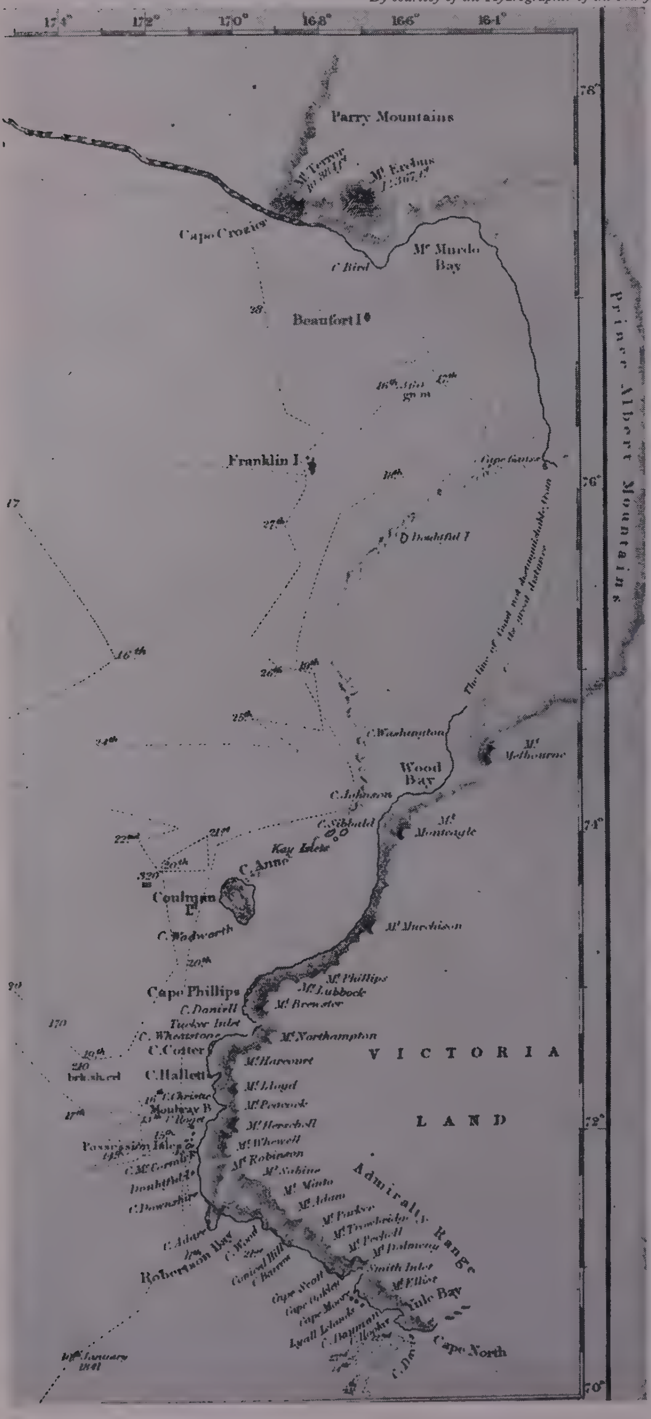
By courtesy of the Hydrographer of the Navy



g. 6: right) *The chart printed*
Veddell's narrative of his voyage
822-3 lays down the tracks of
ships from the South Orkneys
ich he surveyed) east and then
h-east into the Weddell Sea to
15′ south latitude—over three
ees beyond Cook, whose furthest
h in 1773 (in 106° 54′ W) is
marked. Both Cook and Wed-
were favoured by unusual ice
litions: no other ship has
hed Cook's position in his longi-
, and no later expedition has
d the Weddell Sea so clear of
(Fig 7: below) *This illustra-*
“drawn . . . from a sketch by
. Weddell”, shows his ships—
r 60-ton brig Jane *of Dundee and*
65-ton cutter Beaufoy*—at the*
hernmost point of their voyage “in
ear sea” on February 20, 1823.
e, as “nothing like land was
e seen” and his crews began to
nble at the failure to find seals,
ddell decided to return northward
outh Georgia and the Falklands



Both illustrations from the British Museum

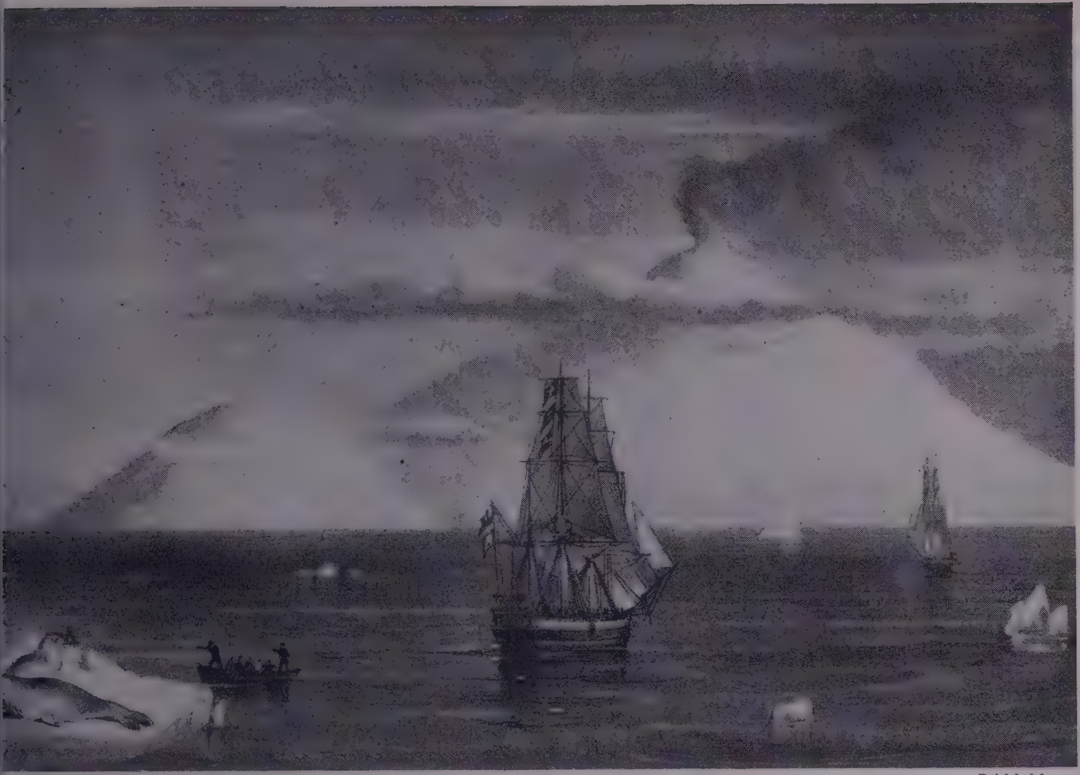


(Fig. 8) Part of James Clark Ross's chart, with the southward track of his ships, January 10-28, 1841, as far as the "great icy barrier" across the head of the Ross Sea

By courtesy of the Hydrographer of the Navy

The discovery of further sections of the Antarctic coast and of its two great gulfs was the work of whaling ships and (after 1840) of nationally organized expeditions. Their commanders were experienced surveyors equipped with the best instruments of their day, and the 19th-century voyages were fully and reliably recorded in narrative and chart. In this period the discovery of new lands was subordinated to their intensive survey and scientific study; and even the great journeys for the ultimate discovery—that of the South Pole—were achieved by expeditions equipped for scientific research.

The firm of Enderby Brothers, of London, instructed its captains to seize any opportunity of making discoveries while engaged in their commercial duty of catching whales and seals. Two of the firm's commanders (both retired Masters R.N.) made notable contributions to the geography of the Antarctic Continent. In 1822 James Weddell, on his second sealing voyage, charted the South Orkneys (which he had touched in the previous year, six days after their discovery by Powell), and stood south and east in search of land. In 72° S "not a particle of ice of any description was to be seen", and on February 20, 1823 Weddell's two ships reached 74° 15'S—"214 geographical miles farther south than Captain Cook" (Figs. 6, 7). Weddell was no doubt lucky, "for no later explorer has found the Weddell Sea so clear of ice". He himself concluded "that the conjecture of Captain Cook, that field ice is formed and proceeds from land, and is not formed in the open sea, is true"; and he suggested that the "sea perfectly clear of field ice", which he found at his farthest south, might well extend to the Pole itself. Weddell's views on the formation of sea ice were not shared by another Enderby skipper, John Biscoe, who believed all Antarctic field-ice to be frozen sea-water "accumulating with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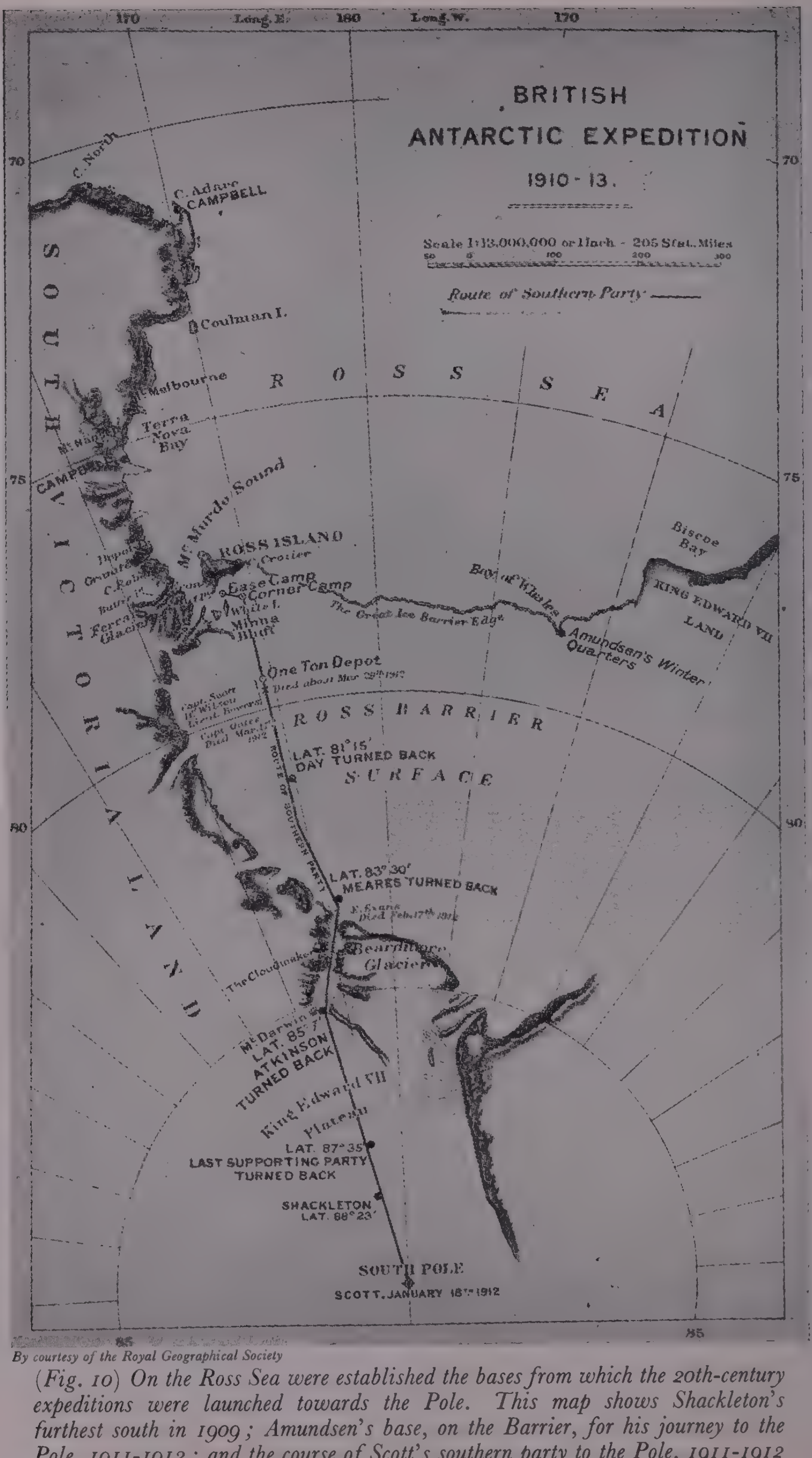
(*Fig. 9*) *Beaufort Island and Mount Erebus, with Ross's ships the* Erebus *and* Terror, *which gave their names to the two volcanoes discovered by Ross. Here in 1841 an eruption of Mount Erebus was seen. The* Terror *had already served in the Arctic, and both ships were lost with Franklin*

time". In 1830-32 Biscoe, under instructions to search for land to the south of the Indian Ocean, discovered Enderby Land (in 66° 25′ S, 49° 18′ E), which was not revisited for a hundred years, and circumnavigated the continent, sailing over 160 degrees of longitude above 60° S and nearly fifty degrees of longitude within the Antarctic Circle.

The running was now taken up by elaborately organized scientific expeditions sponsored by the French, United States and British governments. In January 1840 the French expedition of Dumont d'Urville discovered Terre Adélie, to the south of Australia, in 66° 30′ S. In the same month the American expedition under Charles Wilkes fell in with land, which was named Wilkes Land, in the same sector and, following his instructions, coasted it westward.

The first Admiralty expedition to the Antarctic since that of Cook was led by Captain James Clark Ross. Ross, who had served with Parry in the Arctic and had in 1829 discovered the North Magnetic Pole, sailed in 1839 in command of the two robustly built bomb ketches *Erebus* and *Terror*. The voyage was designed to serve "the science of magnetism . . . by an extensive series of observations made in high southern latitudes"; Ross was "to determine the position of the magnetic pole, and even to attain to it if possible", and his search was to be made to the south of Tasmania. In January 1841 Ross (in 69° 15′ S, 176° 15′ E) passed through the pack ice into open sea and soon after sighted land which he followed southward. Naming the two volcanoes which he sighted after his two ships, he reached 78° 4′ S before being checked by the great ice-barrier which blocks the head of the Ross Sea (Figs. 8, 9). On his second cruise from Tasmania he penetrated the Ross Sea further east to his highest latitude of 78° 9′. His third attempt to reach the Pole, this time by the Weddell Sea, took him to 71° 30′ S, and he rightly concluded that "Weddell was



By courtesy of the Royal Geographical Society

(Fig. 10) On the Ross Sea were established the bases from which the 20th-century expeditions were launched towards the Pole. This map shows Shackleton's furthest south in 1909; Amundsen's base, on the Barrier, for his journey to the Pole, 1911-1912; and the course of Scott's southern party to the Pole, 1911-1912

favoured by an unusually fine season".

After Ross, no other important ventures were made to the Antarctic for a quarter of a century; but the two great indentations pointing to the Pole—the Weddell and Ross Seas—had already been laid down on the map. These were to furnish the bases from which the 20th-century expeditions, culminating in the heroic enterprises of Shackleton, Scott and Amundsen, were to spring (Fig. 10).

In the Arctic, as in the Antarctic, speculation and promotion turned on the possibility of open sea as far as the Pole, which had been tested by Phipps in 1773. In 1818 John Barrow, Second Secretary of the Admiralty, conjectured that " if the great polar basin should be free of land, the probability is, that it will also be free of ice". This hypothesis inspired a remarkable attempt to reach the North Pole made in 1827 by Captain W. E. Parry, Hydrographer of the Navy, who had four earlier Arctic voyages behind him. In boats fitted with sledge runners, Parry reached the latitude of 82° 45′ N (the furthest north for forty-eight years) before being turned back by the southerly drift.

During the first half of the 19th century, however, the mainspring of Arctic exploration was to be the search for "a practicable passage from the Northern Atlantic into the Northern Pacific", which Barrow considered "an object peculiarly British" and which had indeed been the motive of Cook's last voyage. Most of the ensuing ventures were promoted by the Admiralty, at the instigation of Barrow, and they are recorded in numerous original charts preserved in the Hydrographic Department.

The known or conceivable ends of the passage were marked, in the east, by the discoveries of William Baffin in 1616; in the west, by those of Cook in 1778 (Fig. 11). Baffin had pronounced Davis Strait and its northerly extension "to be no other then a great Bay"; Cook had been stopped by ice at Icy Cape, in 70° 44′ W. The explorers of the 19th century had three geographical problems to solve before the passage could be established (Fig. 11): first, the discovery of a

(Fig. 11) A map of 1818 depicting the stages on the North-West Passage known by the beginning of the 19th century, from Baffin Bay in the east to Icy Cape in the west, with the points on the North American coast reached overland by Samuel Hearne in 1771 and Alexander Mackenzie in 1789

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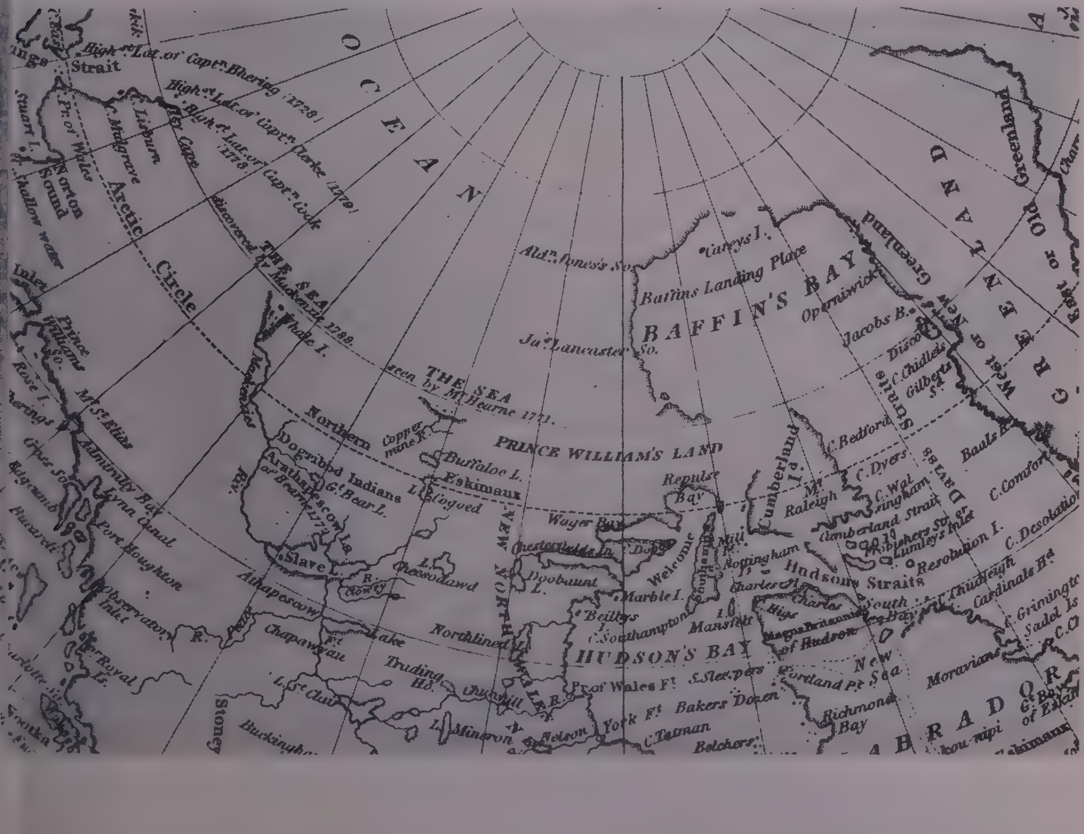

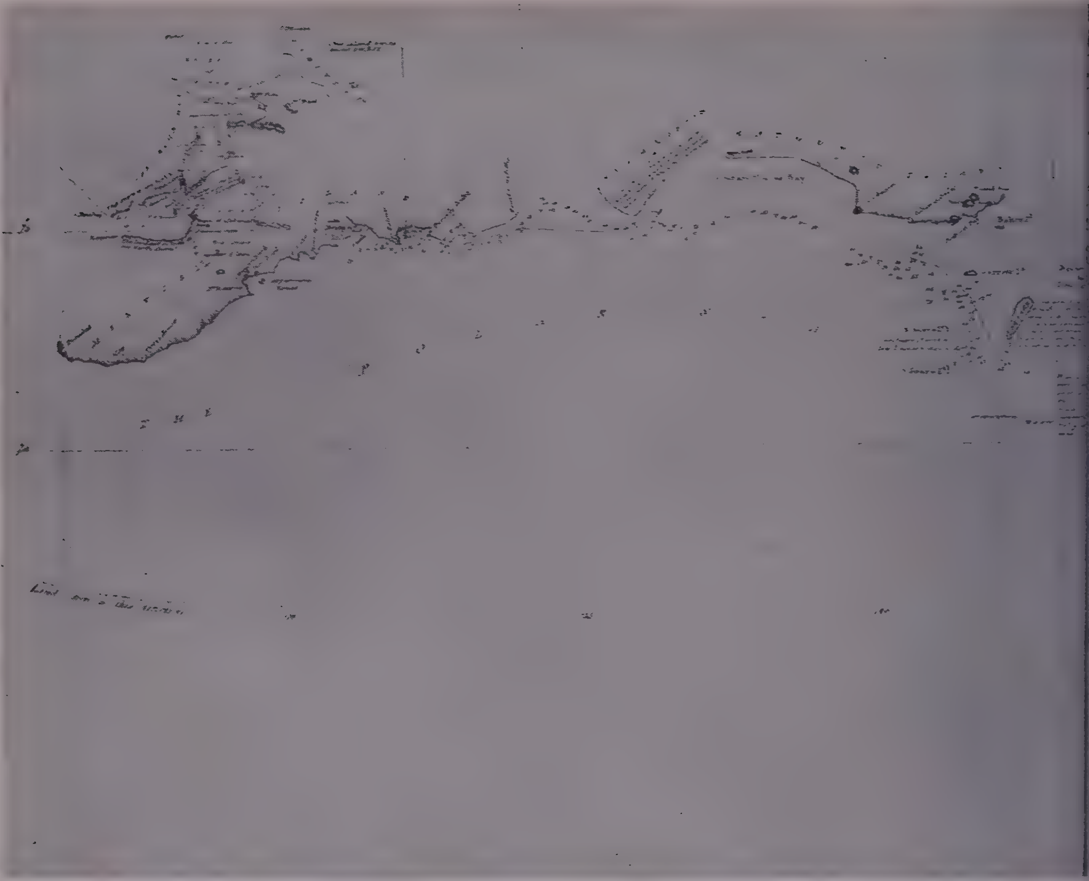

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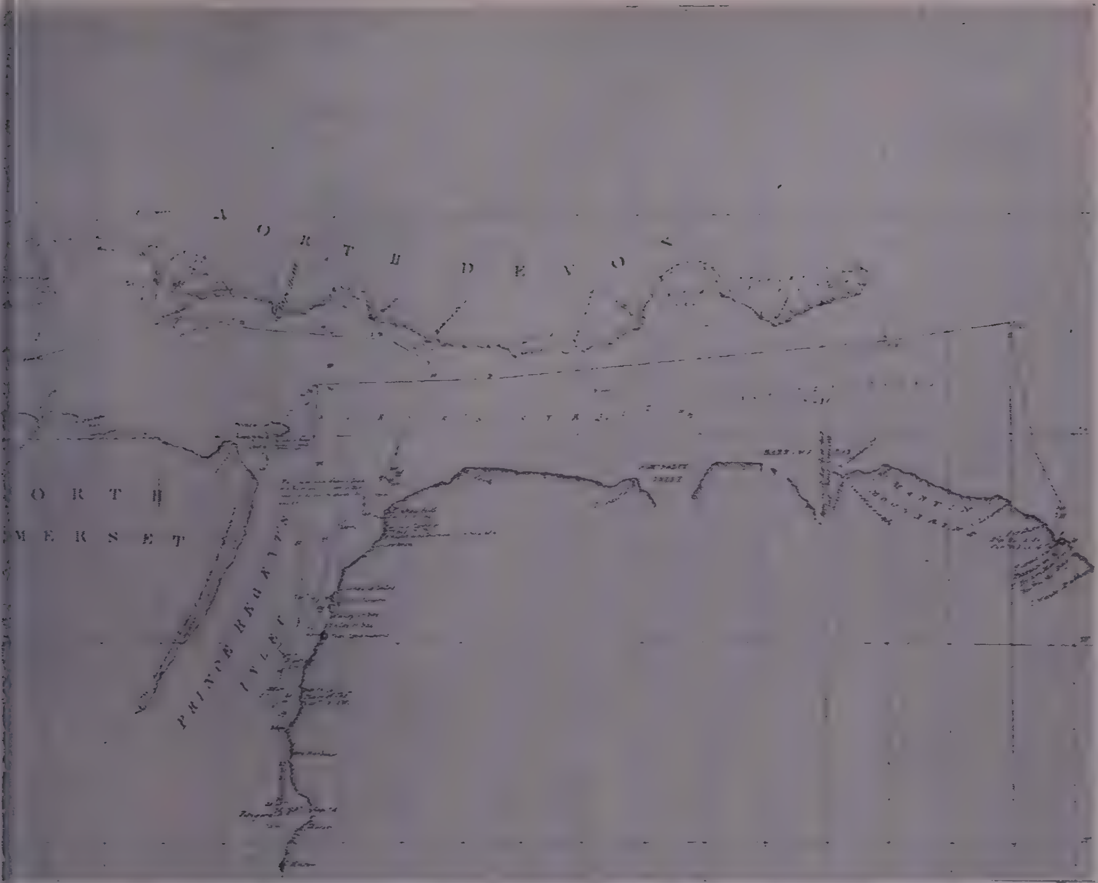
(Fig. 12) Chart by Captain W. E. Parry with his track in 1819 westward from Baffin Bay, through Lancaster Sound and Barrow Strait, to his winter quarters on Melville Island, in 111° W, from which he could see the land of Banks Island across the ice which blocked Banks (McClure) Strait

westward lead out of Davis Strait or Baffin Bay; second, the traverse of the coast of the continent eastward from Cook's *ne plus ultra* to and beyond the mouths of the Mackenzie and Coppermine Rivers (reached by Alexander Mackenzie and Samuel Hearne in 1789 and 1771 respectively); and third, the tracing of channels through the archipelago to link the first two routes.

On Parry's voyage of 1819 he penetrated westward from Baffin Bay through Lancaster and Barrow Straits to Melville Island (Fig. 12). The "heavy and extensive fields" of ice which he found to the west, blocking McClure Strait ("Banks Strait"), convinced him that there was "little or nothing to be hoped for from any further attempts to prosecute the main object of the voyage in this place"; but he had in fact opened up the eastern entrance of the North-West Passage. His chart shows ice-free openings to the north from Barrow Strait, which might confirm Barrow's view of navigable sea towards the Pole. Southward out of Lancaster Strait, Prince Regent Inlet was explored, between 1822 and 1832, by naval expeditions under Parry and Captain John Ross.

The north coast of America was surveyed by a number of expeditions between 1821 and 1839. From the Pacific Captain F. W. Beechey had sailed beyond Cook's furthest point to Point Barrow, in 156° 20′ W. Naval land-based parties, led by Captain John Franklin in 1821-2 and 1825-7, descended the Mackenzie and Coppermine Rivers and mapped their deltas and the adjacent coasts. In 1834 Captain George Back went down the Back (or Great Fish) River to its mouth. In 1837-9 Thomas Simpson linked up these discoveries by navigating the coast of the



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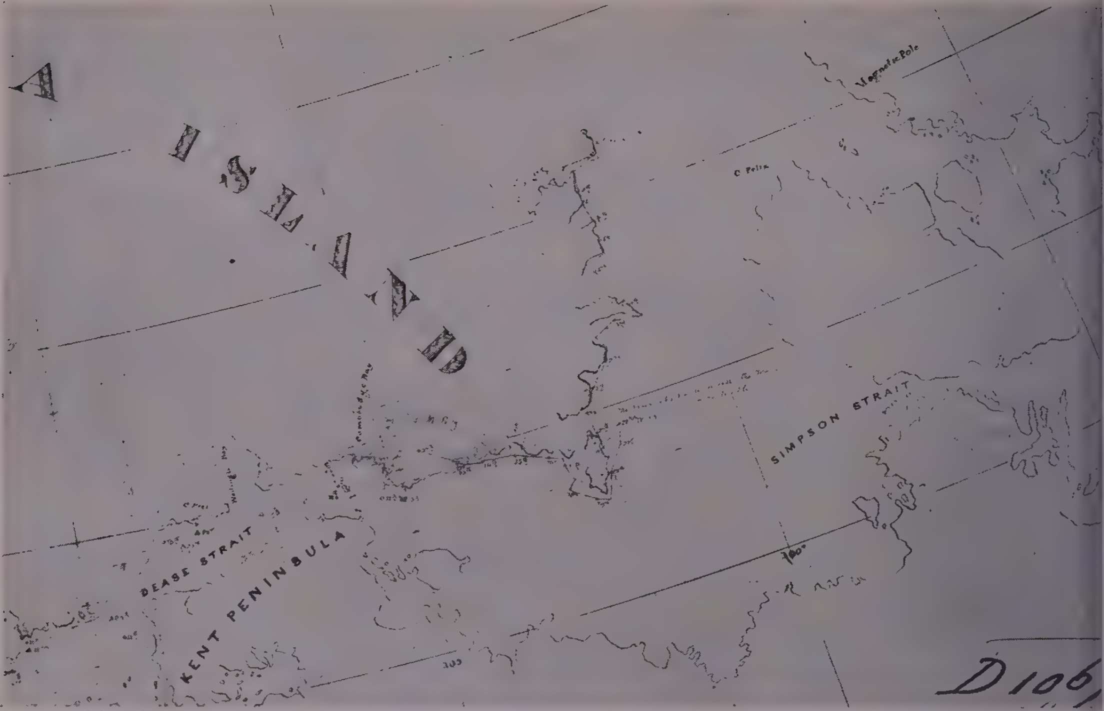
From Barrow Strait Parry had penetrated Prince Regent Inlet for about 120 miles before being turned back by ice. To the north he observed that Wellington Channel, in which "no land nor ice was seen", seemed to offer a navigable passage into the open sea supposed to lie nearer the Pole

continent by boat between Boothia Peninsula in the east and Point Barrow in the west.

The navigable passage would be continuously traced as soon as an open channel had been found through the unexplored area between Lancaster and Barrow Straits, in the north, and any point of the continental coast. In 1845 Sir John Franklin took command of Ross's famous veterans the *Erebus* and *Terror,* with instructions to penetrate south and west from Barrow Strait "towards Bhering's Strait". Franklin, sailing south through Peel Sound, unhappily chose to attempt the passage to the west of King William Island (Victoria Strait), where in September 1846 his ships became ice-locked (Fig. 14). The crews, untrained in polar travel, attempted to make their way overland to the Back River and perished to a man.

Seldom in the annals of exploration has a disaster been more fruitful of further discovery. By the summer of 1847 it was realized that Franklin's venture must have miscarried, and during the next ten years immense efforts were made, both by governments and by private persons, to recover evidence of his fate. In 1850 two large expeditions were dispatched by the Admiralty. Four ships under Austin went to Barrow Strait; two ships—the *Enterprise* under Collinson and the *Investigator* under McClure—were to search eastward from Bering Strait. Collinson, who after five years at sea brought his ship safely home, had penetrated into Dease Strait as far as Cambridge Bay, in the south-east of Victoria Island (Fig. 13). His sledging parties, travelling over the ice along the south and east coasts of Victoria Island, narrowly failed to discover the wreck of one of Franklin's abandoned ships, which had



By courtesy of the Hydrographer of the Navy

(*Fig. 13:* above) *Collinson's chart of the track of his ship into Dease Strait and of his sledging parties along the west of Victoria Strait; one of Franklin's wrecked ships lay on the other side of the Strait: see Fig. 14* (below), *which shows the final stages of the search for Franklin's expedition*

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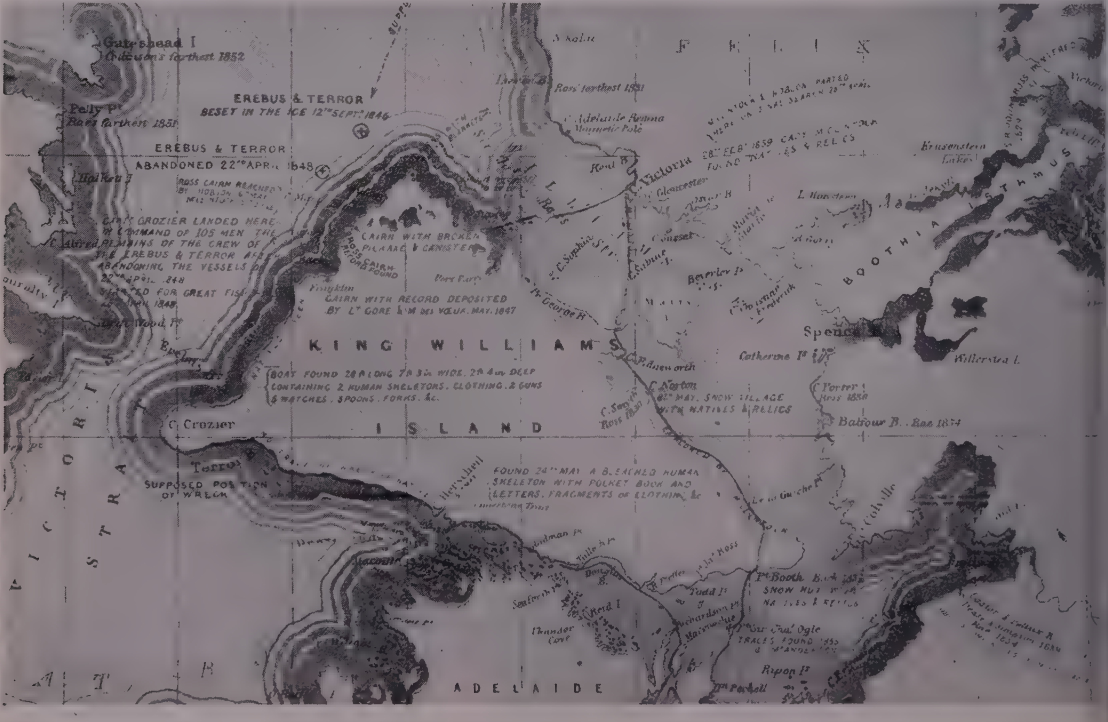
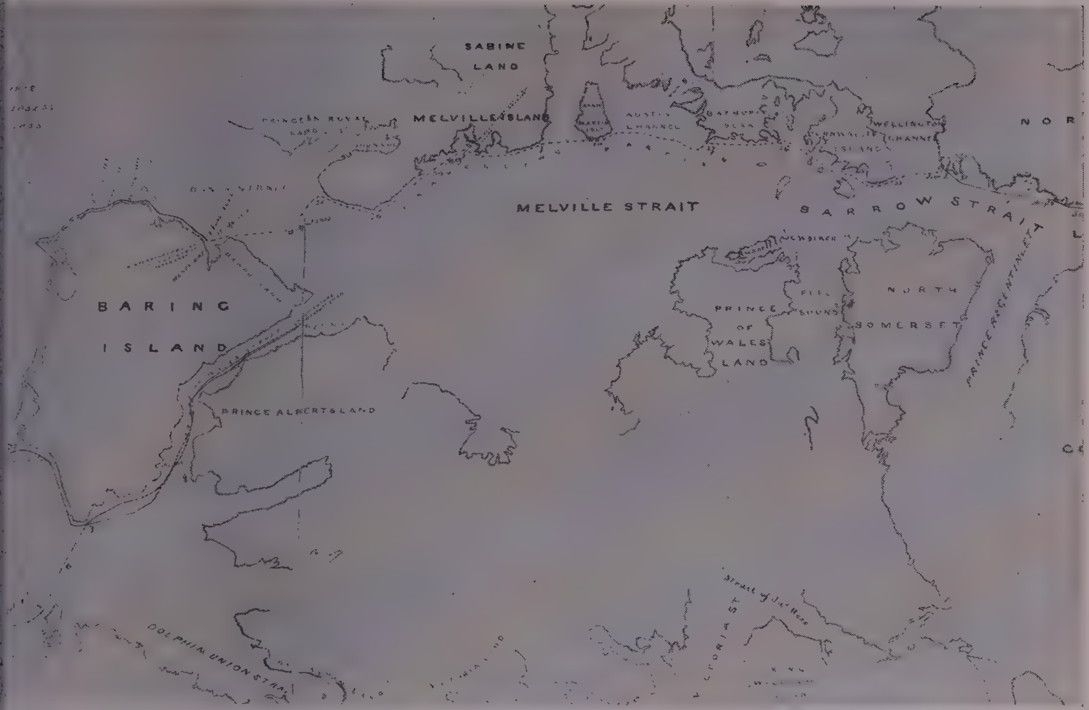

Gateshead I
Collinson's farthest 1852
Pelly Pt
Rae's farthest 1851
EREBUS & TERROR
BESET IN THE ICE 12TH SEPT. 1846
EREBUS & TERROR
ABANDONED 22ND APRIL 1848
ROSS CAIRN REACHED BY HOBSON
CAPT CROZIER LANDED HERE IN COMMAND OF 105 MEN THE REMAINS OF THE CREW OF THE EREBUS & TERROR AFTER ABANDONING THE VESSELS ON 22ND APRIL 1848
STARTED FOR GREAT FISH RIVER 1848
CAIRN WITH BROKEN PICKAXE & CANISTER
ROSS CAIRN RECORD FOUND
Franklin
CAIRN WITH RECORD DEPOSITED BY LT GORE & MR DES VŒUX. MAY. 1847
KING WILLIAMS ISLAND
BOAT FOUND 28 ft LONG 7 ft 3 in WIDE. 2 ft 4 in DEEP CONTAINING 2 HUMAN SKELETONS. CLOTHING. 2 GUNS & WATCHES. SPOONS. FORKS. &c.
C. Crozier
Terror
SUPPOSED POSITION OF WRECK
VICTORIA STRAIT
Herschell
FOUND 24TH MAY A BLEACHED HUMAN SKELETON WITH POCKET BOOK AND LETTERS. FRAGMENTS OF CLOTHING &c
Ross' farthest 1831
C. Adelaide Regina
Magnetic Pole
Kent B.
Victoria
28TH FEB. 1859 CAPT. MCCLINTOCK FOUND NATIVES & RELICS
C. Gloucester
C. Sabine
Beverley Is
FELIX
BOOTHIA ISTHMUS
Krusenstern Lakes
Spence
Catherine Is
Willersted L.
C. Porter Ross 1858
Balfour B. Rae 1854
C. Norton
SNOW VILLAGE WITH NATIVES & RELICS
C. Smith Ross 1830
Colville
Pt Booth
SNOW HUT WITH NATIVES & RELICS
Pt Ogle
TRACES FOUND 1855
Todd Is
Richardson Pt
Ripon Is
Thunder Cove
Reid I
ADELAIDE



By courtesy of the Hydrographer of the Navy

(*Fig. 15 :* above) *Chart showing McClure's completion of the North-West Passage by sledge from the* Investigator*'s winter quarters (1852-3) on Banks ("Baring") Island during the search for Franklin*

drifted southward through Victoria Strait; but he pointed the way to the navigable passage. McClure's ship had to be abandoned in 1853 in Mercy Bay, on the north coast of Banks Island, and he sledged across the ice of McClure Strait to Melville Island, where he was picked up, near Parry's "Winter Harbour", by two ships of Austin's expedition (now commanded by Belcher). Thus McClure completed the north-west passage from west to east, although in three different ships and (over one section) by sledge (Fig. 15).

In 1853 Dr John Rae, of the Hudson's Bay Company, picked up relics and reports of the death of Franklin's men from the Eskimos in the neighbourhood of King William Island, the channels round which had been explored by Rae. In 1859 Captain F. L. McClintock in the *Fox*, fitted out by Lady Franklin, sailed south into Prince Regent Inlet, and on sledge journeys along the coasts of King William Island, where he found the two written records and many other relics of the expedition (Fig. 14).

The search for Franklin had revealed the navigable channels by which the North-West Passage could be made. Amundsen, making the first continuous navigation of the passage in 1903-6 in the motor-ship *Gjöa*, followed Franklin's route through Peel Sound and the east—and so far unnavigated—coast of King William Island to Collinson's furthest east in Cambridge Bay. Thus the achievement of the passage was built upon Franklin's expedition and its sequel. It was in this sector again, from Ellesmere Island in the north of the Canadian archipelago, that the Pole itself was reached by R. E. Peary in 1907.

* * *

The maps reproduced in the series of articles here concluded reflect, in varying degree, the knowledge with which the early explorer set out, his hopes and expectations, and the discoveries which he made. The chart or map was originally developed as a guide to travellers along frequented routes. As the limits of the world known to Europeans were extended, the critical effort of cartographers came to be concentrated at its periphery, on the uncertain boundary between knowledge and ignorance. From the 15th century the map has been a powerful instrument in the communication of geographical ideas and experience. As a graphic document employing visual symbols it has made a more immediate impact on men's minds than the written word. This may be partly explained by the positiveness with which it presents geographical facts. The statements which it makes—on position, direction, distance, or extent—have an absolute character in comparison with those of written texts which can more easily be qualified. At the same time, and perhaps for similar reasons, the influence of mapmakers on geographical thought has tended to be conservative rather than progressive, and maps alone are no true index to the state of knowledge in their time.

These general considerations are exemplified time and again in the history of exploration and in the maps associated with it. Many important discoveries have been made by expeditions in quest of illusory objectives laid down on their maps. "The fictions", wrote Sir Walter Raleigh, "(or let them be called coniectures) painted in Maps, doe serue only to mis-lead such discouerers as rashly beleeue them." In the longitudes in which he thought to find Cipangu and Cathay, Columbus made his landfalls in the West Indies and South America. French, Spanish and English explorers, seeking a waterway from the Atlantic seaboard to the Pacific, revealed the great extent of the American continent "from sea to sea". The west coast of Australia was "unexpectedly and accidentally" discovered by Dutch ships eastward bound and out in their reckoning. Tasman, in search of a Southern Continent, fell in with New Zealand. The concepts which inspired these and many other venturers are recorded in the maps which they carried with them; and the maps which they brought home often reveal the pertinacity with which they held to their original hypothesis and sought to reconcile it with their new discoveries. Raleigh defended conjecture in history, "as Geographers in their Maps describe those Countries, whereof as yet there is made no true discouery, that is, either by leauing some part blanke, or by inserting . . . Head-lands, Bayes, great Riuers, and other particularities, agreeable to common report, though many times controlled by following experience, and found contrary to truth".

Thus a chronological sequence of early maps will not necessarily show continuous progress in representation. Running through it, and defying experience, may sometimes be found a constant and dominant feature: a strait or seaway connecting two oceans, a land bridge between known territories, a stretch of continental coast. These are the great geographical myths—navigable passages within the Arctic Circle, a Strait of Anian or of Juan de Fuca, a Terra Australis ranging from the South Pole to the Tropics, a southward extension of New Guinea linking it to Australia.

Such myths were not merely the creation of armchair geographers like Herrick's brother:

> . . . thou at home without or tyde or gale,
> Canst in thy Map securely sail:
> Seeing those painted Countries; and so guesse
> By those fine Shades, their Substances.

An *a priori* theory, born in the study and resting on arguments from analogy and symmetry, might indeed lie behind the cartographer's representation of a Southern Continent; and it was erroneous estimates of the size of the earth and so of the length of a degree that deluded the early discoverers of America and in the Pacific. But into his pattern, extending or completing it, the mapmaker wove also many imperfectly correlated travellers' tales. The explorers themselves, seeking illusory lands and the wealth which they too willingly located in them, made their contribution to the myths and furnished corroborative evidence for them. Landfalls on scattered islands, seabirds and floating weed, the absence of ocean swell—such reports could be pieced together into the outline of a continuous continental coast. An estuary or gulf, barred to a pilot by reefs or adverse winds, could be interpreted as an open strait.

Until the 18th century the explorer's map must in general be considered an imperfect record of his achievement. Before the day of the reflecting sextant and chronometer, his techniques for laying down his position and track admitted a wide margin of error, and the uncertainty with which his discoveries were mapped often broke the thread of continuity for centuries. Above all the early explorer was no slayer of myths: he sought in the expectation of finding, and few of the predecessors of Cook and Bougainville, or of Park and Mackenzie, approached their task in the sceptical spirit of the scientific traveller.

Nevertheless these reservations do but increase the value of early maps as documents in the history of human thought and enterprise. They testify to the slender resources with which the early traveller boldly measured his skill against unknown hazards by sea and land "in searching the most opposite corners and quarters of the world, and . . . in compassing the vaste globe of the earth".

Reutlingen

by C. A. BURLAND

BETWEEN the headwaters of the Neckar and the Danube lies a great limestone massif, the Swabian Jura. It rises gently from the Danube plain, but its north face is steep and wooded, with narrow valleys dominated by the remains of feudal castles.

From the time of Charlemagne onward, the population moved from the hills down to the valleys and many small towns grew up along the Neckar, usually with a feudal overlord, but populated by an independent-minded peasantry. One of these is Reutlingen, the place of Duke Riutilo, which has a recorded history dating from 1090.

The town was bound to prosper: it had good potters' clay, abundant timber and a wool-producing hinterland on the mountains. A trackway over the Jura led to the navigable head of the Danube at Ulm, so in mediaeval times it was a self-supporting community, with commercial links with the rest of the world via the Danube and Neckar.

Reutlingen was made a Free City by the Emperor Otto IV and granted charters in 1208 and 1212. Frederick Barbarossa, a Hohenstaufen from these very mountains, confirmed those rights and extended them. In 1430 the townspeople won a battle against the local baron and with this victory gained control of the surrounding lands. The 14th and 15th centuries seem to live in the local folk-memory as a period from which traditions spring naturally. They were indeed great days in which these small towns of Swabia played their part in the prosperity of the Empire. The trade guilds had their halls, the churches were filled with treasures and fine houses were built by the merchants. It was a time of great independence of spirit and a real flowering of culture before the religious wars swept over the whole country.

The comparative isolation and the resilience of the peasant population preserved the town through the next two or three centuries. In 1722 it had 300 hand-weavers operating within its walls. There were wool and linen spinners, dyers, leather-workers and a very prosperous group of metal-smiths who produced practical vessels of some beauty.

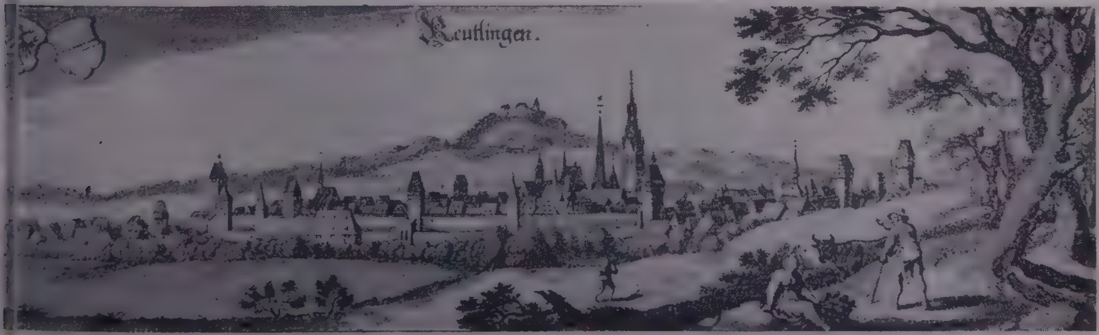
Geography determined further developments as the Industrial Revolution reached this part of Württemberg. The situation of the town still dictated its economy and the abundant water-supply, from the short, rapid streams flowing down from the Jura, turned the great wheels of tanneries and spinning and weaving mills. The ancient crafts played a full part in the new industry. But the social structure of the community made the impact of the Industrial Revolution less violent in these valleys than in many other parts of the world.

The people, peasants and tradesmen for the most part, well understood the importance of increased production. The local pack-men had the reputation of travelling all over the world with their cases of trade-goods. The peasants, used to making and doing everything for their own households, had great technical ability and the kind of practical knowledge that enabled them to handle materials to the best advantage when it came to working in factories. They were thus able to gain a handsome livelihood and a good reputation for the products they turned out.

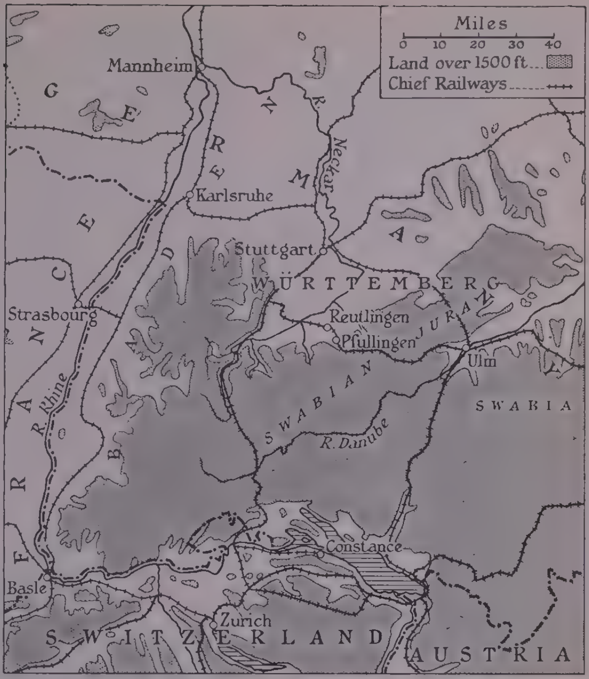
The present town is a child of its past. The factors which contributed to its former prosperity are still operative. The water-wheel

A 17th-century engraving of the old walled city which forms the heart of present-day Reutlingen

All photographs by Foto-Näher, Reutlingen



Almost every peak in the Swabian Jura, the hills lying south of Reutlingen, was surmounted by a castle in olden times. (Opposite) *All are now in ruins except Schloss Lichtenstein which overlooks an old trade-route from the Neckar to the Danube. It was restored in 1840, under the influence of the novels of Sir Walter Scott, by Wilhelm, Graf von Württemberg.* (Below) *The view looking north-west from the Swabian Jura towards Pfullingen and Reutlingen which lies below the left-hand peak. Apples, pears, corn and potatoes are grown in the valleys by peasants whose small-holdings are worked on the strip-system which was common in Saxon England*



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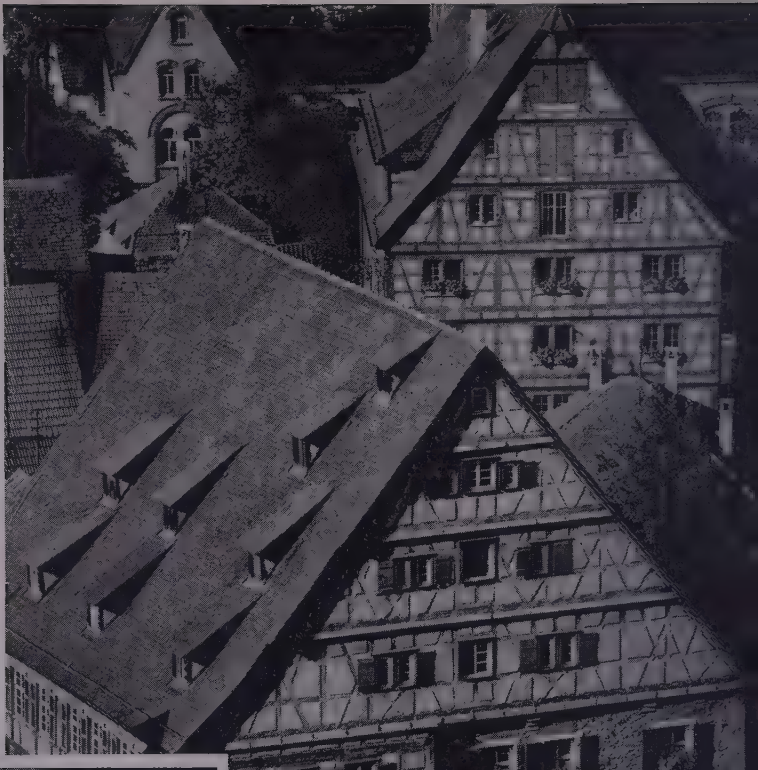

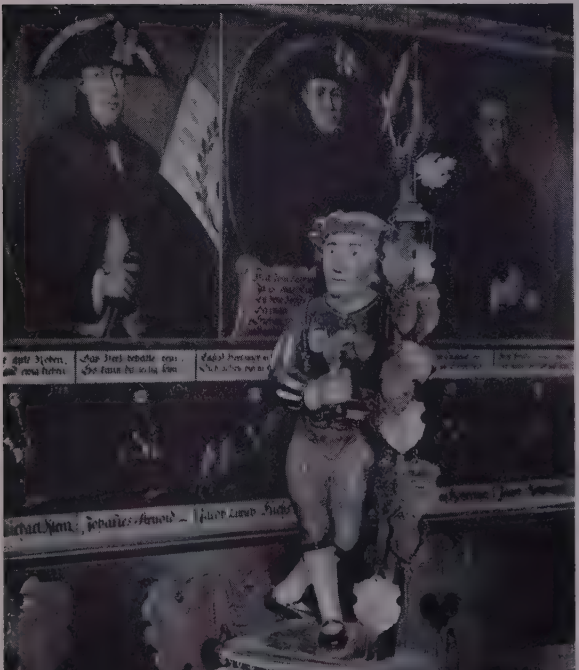

Much of mediaeval Reutlingen has survived. (Above) *Two of the oldest houses are these of characteristic timber-framed construction. The one behind, formerly the municipal granary, is now a library and art gallery. The building in the foreground used to be an orphanage run by monks: today it contains the local museum and* (left) *a room belonging to the Wine-Growers' Guild, lined with portraits of Past Masters. The carved figure symbolical of their calling stands on the high table: a wine-grower with a pruning-hook in one hand and a staff in the other, from which are suspended the badges of office of former Masters*

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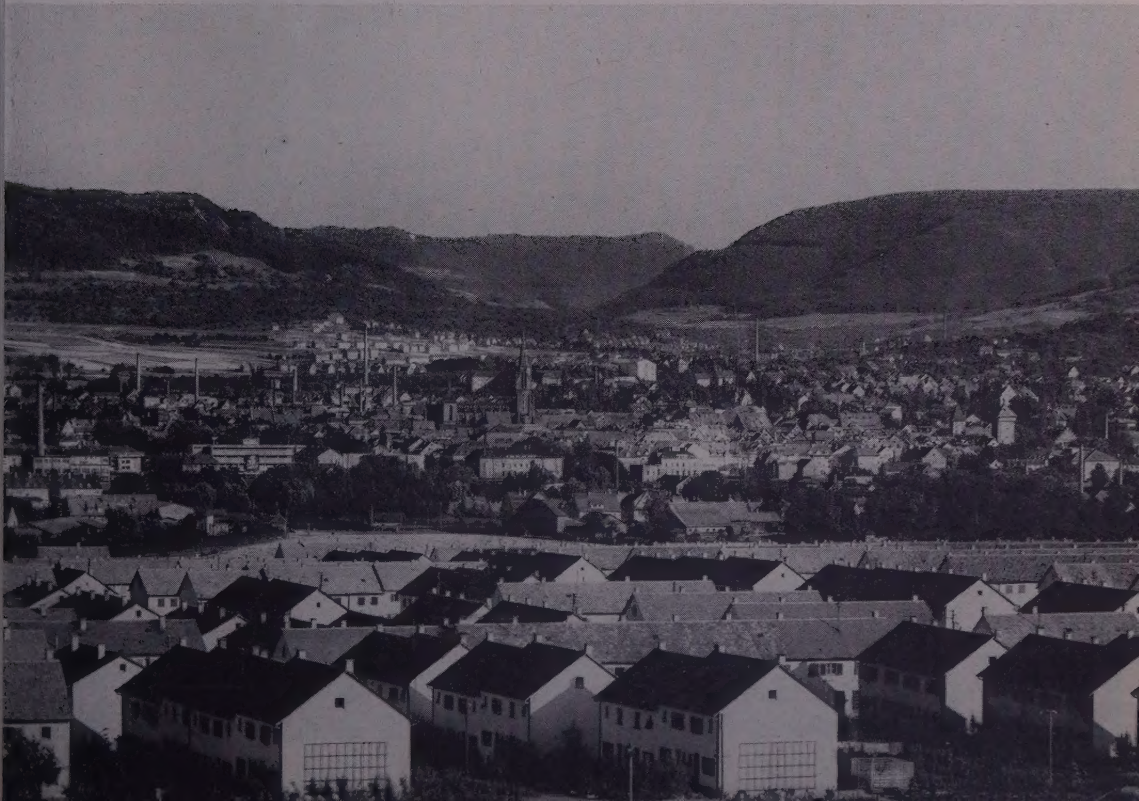
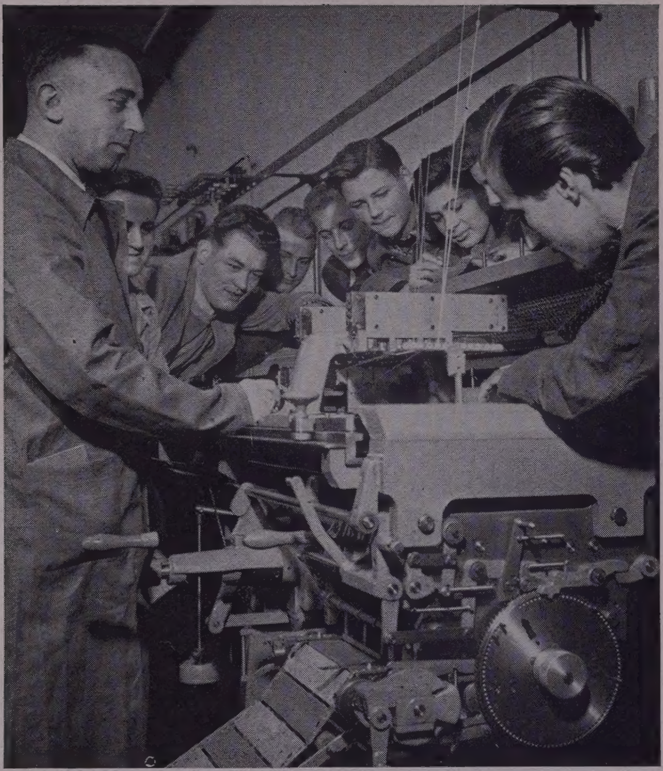
(Below) *The most prominent landmark in Reutlingen is the Gothic Marienkirche with its tall 13th-century spire which is topped by an angel* (right), *surprisingly modern-looking though of the same date. This human-size figure fell down during an earthquake in 1943; it has since been repaired and was recently replaced, gleaming in a fresh coat of gold-leaf. Some years ago a magnificent set of vestments was found in a chest in the church where they had been forgotten probably since the Reformation. They proved to be some of the finest examples of mediaeval embroidery in Germany and are now housed in the Reutlingen Museum*

(Left) *The main street and market-place of Reutlingen are a pleasant medley of the architecture of many periods, though the ultra-modern (e.g. the hotel on p. 210) is absent here. On the right, with Gothic windows, is the Volksbildungshaus, a kind of adult education centre where day and evening classes in handicrafts are held; it is also used for concerts and films.* (Below) *One of the surviving towers in the old town walls. This and its fellows appear in the 17th-century print (p. 201)*

(Right) *The Textile Technicum, which celebrated its centenary in 1955, provides a technical training for men and women from all parts of Germany and other countries.* (Below) *Houses on new estates on the outskirts of the town, while modern in style, are built in sympathy with the older architecture and fit in well with the surroundings. The extent of the walled city is clearly seen in the middle distance, its towers and the Marienkirche spire forming a contrast with the many factory chimneys*





The main industries at Reutlingen are textiles, dyeing, leather and timber-working. (Left) *Apprentices at the textile school study a sheet-knitting machine. The Technicum is equipped with all the latest machinery, and every aspect of the industry, including weaving, design and dyeing, is studied during a course lasting two years.* (Below) *The interior of a yarn-spinning shed in one of the larger factories. In spite of the advanced techniques which have been introduced into the traditional industries of Reutlingen there are some crafts in which the old hand-workmanship is indispensable; one of these is the manufacture of high-grade leather goods.* (Opposite) *A leather-worker fleshing hide*

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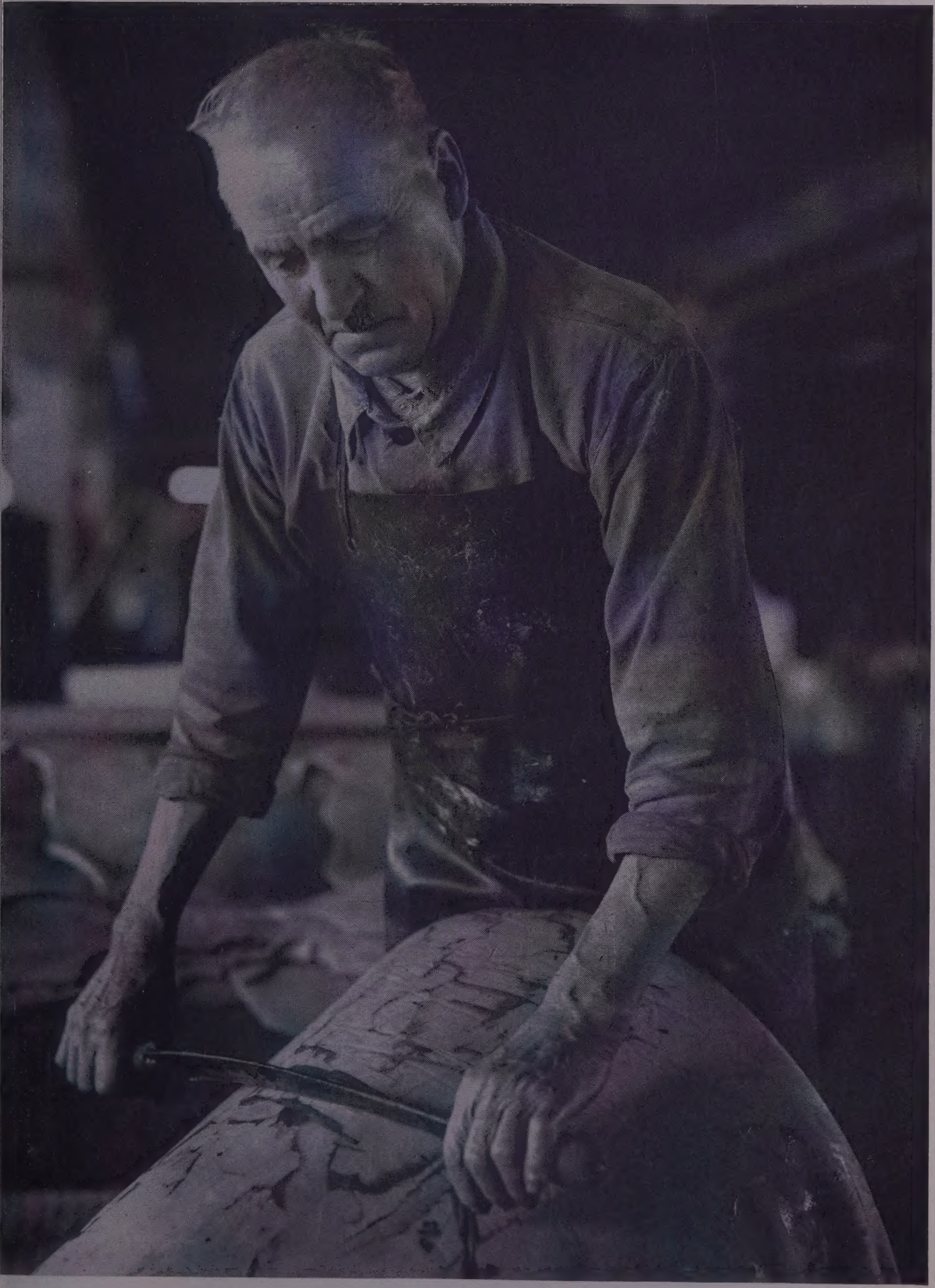

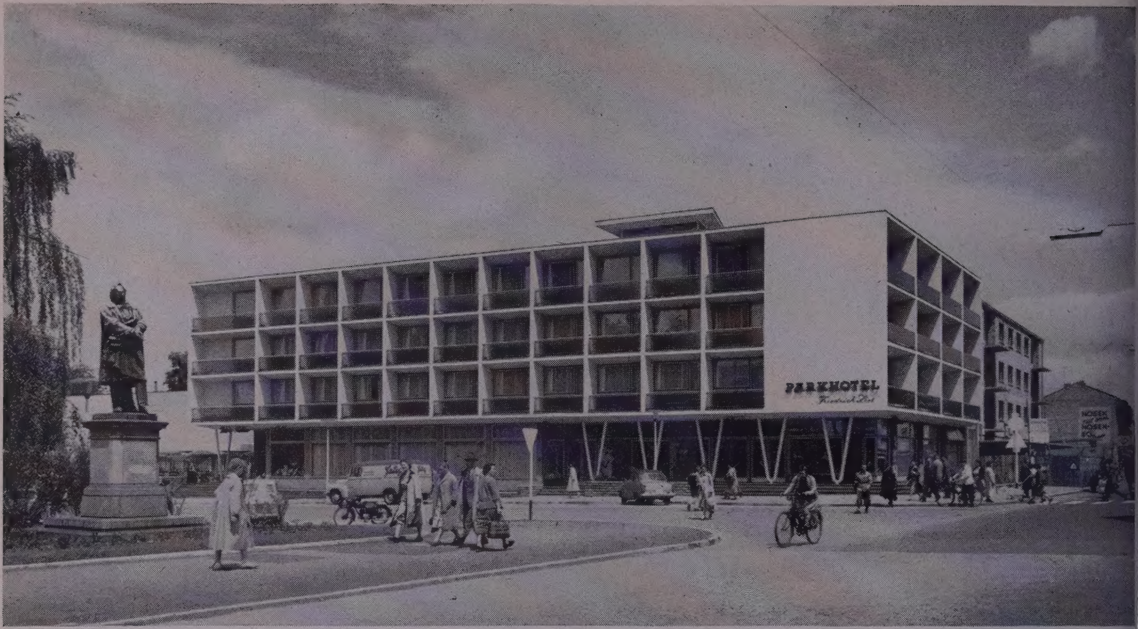

The business centre of Reutlingen, considerably damaged by bombing in World War II, has now been largely rebuilt. The principal hotel, designed by local architects, faces a public garden adorned by a statue to the 19th-century liberal politician Friedrich List who was a native of Reutlingen

has given place to the turbine generator; the 300 weavers to three great textile factories, one of which alone produces over 2,000,000 yards of finished cloth annually. The leather-workers are making brief-cases instead of pack-saddles. The wood-workers are turning out excellent furniture from local timber.

Unhappily there is cause for a surge of building activity for during World War II a large section of the town near the railway-station was laid in ruins in an-air raid. At first reconstruction was slow when materials were impossible to obtain and great stretches of forest land had to be cut to supply timber to France. But during the last five years things have moved apace. The general effect of the new buildings is one of pleasant diversity, since the local creamy-coloured limestone of buildings contrasts with balconies and windows painted pastel pinks, yellows and greens. This new section of the town joins onto the old quite naturally. The broad new boulevards lead into narrow old streets, but the colour of both is the same.

The development has been planned deliberately. Every new building had official approval before it went up and the layout of the new sections relates the area of the ancient walled town to the outer suburbs of residential villas dating from the first decade of this century. It is quite strikingly apparent, however, that the new section is more traditional in form than were these suburbs of the 1910s. This is partly a matter of constructional feeling, because the steel-framed and panelled building of today has much in common with the timber-framed 'skyscrapers' of 15th-century Germany.

The love of traditional ways is quite a feature of the people and the old things of their town are carefully preserved. The Town Museum, once a monastic building, has a good historical collection and also houses the hall of the Wine-Growers' Guild where members of the society still meet. In the town itself this love of tradition is also to be seen in the care with which fountains and statues have been restored.

But it is only natural that a modern town, with the most famous textile technical school in Western Germany, should also be interested in modern art and architecture. In the Spendhaus there is a fine art-gallery which holds exhibitions of sculptures and paintings; while two Reutlingen artists have held exhibitions in London. Perhaps it is true of all Reutlingen that it is a living community; it has survived many vicissitudes and continues to grow and expand, a symbol of its sturdy people and their way of life.